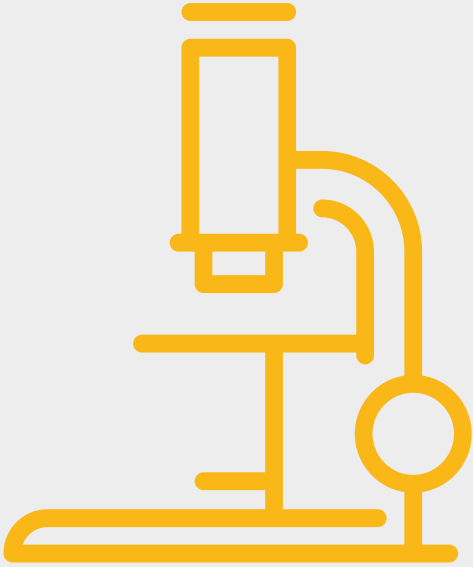
Programma wetenschaps-symposium 2022

Medicine Based Evidence

dinsdag 1 november 2022

16.00 - 21.30 uur

Auditorium MCL



Maak kennis met wetenschap in het MCL!

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Voorwoord

Vandaag is het zover, we mogen weer live met elkaar het MCL Wetenschaps-symposium beleven. Alleen daarom al een feest. Het thema van dit jaar is Medicine Based Evidence. Wat kunnen we leren van de behandelingen die we aan onze patiÎnten geven? Natuurlijk leren we wel op een gestructureerde wijze, namelijk in de vorm van onderzoek. Dat is wat we binnen het MCL willen en kunnen.

Dit jaar hebben 29 onderzoekers de kans aangegrepen om hun ervaringen met ons te delen. Na een strenge selectie door de wetenschapscommissie gaan vijf onderzoekers op voor de Auletiusprijs 2022. De kandidaten zijn Iris Barth, Hans Kroes, Hanne Rozema, Bart van Dooren en Edith Visser. Alle vijf behoren ze tot zeer actieve onderzoeksgroepen met prachtig lopend onderzoek. Zonder twijfel krijgt Hanne Rozema, de laatste winnaar van de Auletiusprijs, een waardige opvolger. Of wordt ze ook dit jaar weer de winnaar?

Verder gaat het er natuurlijk ook weer om de publieksprijs 2022. Tien kandidaten met de klok als hun tegenstander. In vier minuten moeten ze het publiek ervan overtuigen dat hun onderzoek het beste is. Aan het eind van de avond bepaalt u wie er wint. Het wordt ´televoting´, dus houd uw telefoon bij de hand.

Dit alles wordt omlijst met twee prachtige themalezingen omtrent hoe Medicine Based Evidence in de dagelijkse praktijk werkt. Dr. Christiaan Boerma praat ons bij vanuit het medisch perspectief en dr. Margreet van der Cingel vanuit het verpleegkundig perspectief.

Al met al een zeer boeiende inkijk in hoe binnen het MCL de wetenschap vaste vorm heeft gekregen. Dit alles onder de bezielende leiding van dr. H. Lameijer.

Mede namens het organisatiecomité wens ik jullie een leerzaam en inspirerend symposium!

Nic Veeger

In dit boekje vindt u het programma van de avond en de samenvatting van de onderzoeken die vanavond gepresenteerd worden.

Benieuwd welke onderzoeken nog meer lopen in het MCL? Lees alle samenvattingen achter in dit boekje.

Programma

Dagvoorzitter Dr. Heleen Lameijer

16:00 – 16:25 uur	Ontvangst
16:25 – 16:30 uur	Opening
16:30 – 16:45 uur	**Abstract** "The Effect of Protein Delivery and Exercise Therapy on Patient Reported and Clinical Outcomes in ICU Survivors: a Systematic Review." **Spreker:** Iris Barth
16:45 - 17:00 uur	**Abstract** "Cumulative Corticosteroid Sparing Effect Of Anti-Interleukin-5 Biologics In Eosinophilic Asthma." **Spreker:** Hans Kroes
17:00 - 17:15 uur	**Abstract** "Increased prescription rate of anti-infective agents after diagnosis of myelodysplastic syndromes." **Spreker:** Hanne Rozema
17:15 - 17:45 uur	**Themalezing: Medicine Based Evidence in de verpleegkundige praktijk** **Spreker:** Dr. Margreet van der Cingel
17:45 - 18:15 uur	**5 short research presentations** - Power talks (1-5)
18:15 - 19:00 uur	**Pauze met buffet**

Vervolg programma MCL Wetenschapssymposium dinsdag 1 november 2022.

19:00 – 19:30 uur	**5 short research presentations** - Power talks (6-10)
19:30 – 20:00 uur	**Themalezing: Medicine Based Evidence in de dagelijkse medische praktijk** **Spreker:** Dr. Christiaan Boerma
20:00 – 20:15 uur	**Abstract** "Direct superior approach (DSA) reduces short-term revision risk for total hip arthroplasty compared to posterolateral approach. Early nationwide results based on the Dutch Arthroplasty Register (LROI)." **Spreker:** Bart van Dooren
20:15 – 20:30 uur	**Abstract** "Muscle function in moderate to severe asthma: association with clinical and functional outcomes." **Spreker:** Edith Visser
20:30 – 20:45 uur	**Publieksstemming en prijsuitreiking** "Beste short research presentation - Power talk".
20:45 – 20:55 uur	**Prijsuitreiking** Auletiusprijs voor beste wetenschappelijk onderzoek.
20:50 – 21:00 uur	**Afsluiting symposium**
21:00 – 21:30 uur	**Borrel en hapjes** met toast op winnaars Auletiusprijs, en beste Power talk.

Power talks

17:45-18:15 **5 short research presentations - Power talks (1-5)**
4 minuten + 2 minuten voor één of twee vragen.

1. The learning curve of the direct anterior approach is 100 cases. An analysis based on 15,875 total hip arthroplasties, using the Dutch Arthroplasty Register. Rinne Peters

2 Verpleegkundig leiderschap in de ziekenhuispraktijk; Een onderzoek naar de beleving, ervaringen en zelfbeoordeling van leiderschapscompetenties door verpleegkundigen in een topklinisch ziekenhuis. Richtsje Andela

3 The effect of ambient air pollution on incident adult-onset eosinophilic airway disease in the Lifelines Cohort Study. Janneke Pepels

4 The prevalence of mental frailty in ICU survivors and informal caregiver strain: a 1-year retrospective study of the Frisian Aftercare Cohort. Lisa Beumeler

5 An explorative analysis of patients, suffering from rheumatoid arthritis and a lymphoproliferative disorder: a population-based study. Anniek Sikkema

19:00 – 19:30 **5 short research presentations - Power talks (6-10)**
4 minuten + 2 minuten voor één of twee vragen.

6 Early treatment outcomes add in predicting long-term benralizumab response in severe asthma. Hans Kroes

7 Teamwork, Clinical Leadership Skills and Environmental Factors that influence Missed Nursing Care: A qualitative exploratory study on hospital wards. Christien Beiboer

8 Clinical view versus guideline adherence in ferritin monitoring and initiating iron chelation therapy in MDS patients. Hanne Rozema

9 Long-term effects of anti-IL-5/5Ra biologics on weight change in severe asthma patients. Lianne ten Have

10 Adverse Drug Reactions of Intranasal Corticosteroids in the Netherlands: An Analysis from the Netherlands Pharmacovigilance Center. Corine Rollema

1 Oral presentations

The Effect of Protein Delivery and Exercise Therapy on Patient Reported and Clinical Outcomes in ICU Survivors: a Systematic Review.

Iris Barth1 and Lise Beumeler2,5, Lenny Nahar-van Venrooij3, Olga van Dijk4, Hanneke Buter5, E. Christiaan Boerma5.

1 Department of Dietetics, Medical Centre Leeuwarden. Present: Department of Gastroenterology and Hepatology, University Medical

Background:

In the first two weeks of ICU admission, muscle loss in critically ill patients can add up to 22.5% resulting in weakness and organ dysfunction. Although enhanced treatment options have led to a growing number of patients who survive critical illness, many ICU survivors suffer from mental problems and less physical functioning. This is known as the Post Intensive Care Syndrome, which negatively affects self-dependency and quality of life. Nutrition and exercise interventions could contribute to preventing this decline in health status which occurs during critical illness. Therefore, the aim of this systematic review was to determine the effect of protein provision, preferably combined with exercise therapy, on improving long-term recovery, including patient-reported outcome measures in ICU survivors.

Methods:

In this systematic review, we searched Embase, Pubmed, and the Cochrane Central Register of Controlled Trials (CENTRAL) between 2014-2021, along with additional records from reviews. Included studies were randomised controlled trials (RCTs) and non-randomised studies on intervention effects (NRSI) with adult patients receiving protein provision or combined protein-exercise therapy, admitted to or recovering from the ICU. The interventions included all types of feeding routes, sources, and exercise/mobility therapies, which were compared to standard care or a lower protein target. Outcomes were: quality of life, physical functioning, muscle health, protein/energy intake, and mortality. Assessing eligibility for inclusion of studies, data collection, and assessment of the risk of bias were all performed by two reviewers independently. Effect measures were presented as mean difference (MD) or standardised mean difference (SMD) to derive a comparable effect size in case of diversity in measurement of the same outcome (≤0.2 small, 0.3-0.7 moderate and ≥0.8 large effect).

Results:

The degree of overall observed agreement between the reviewers regarding assessment for eligibility of studies was moderate to good (κ=0.41-0.72). Fifteen studies were included. Half of these studies were judged as high/serious risk of bias. Two protein provision studies showed statistically significant improvement in the intervention group on physical functioning at hospital discharge and increased muscle size on day 7 (Barthel Index: SMD 0.76; 95%CI [0.21;1.30], forearm muscle thickness: SMD 0.99; 95%CI [0.61;1.38], thigh muscle area: SMD 0.50; 95%CI [0.13;0.86]). In one study, combined protein-exercise therapy resulted in less muscle loss on day 10 (MD -4.6%; 95%CI [0.74-8.46]). Protein targets were seldom met and often far below recommendations. No significant effects on QOL were found (SMD -0.11-0.39). Higher protein tends to a decreased mortality risk (OR 0.60-0.91; HR 0.02-0.90), but opposite results were also seen (OR 0.02-0.90; HR 1.49-3.65).

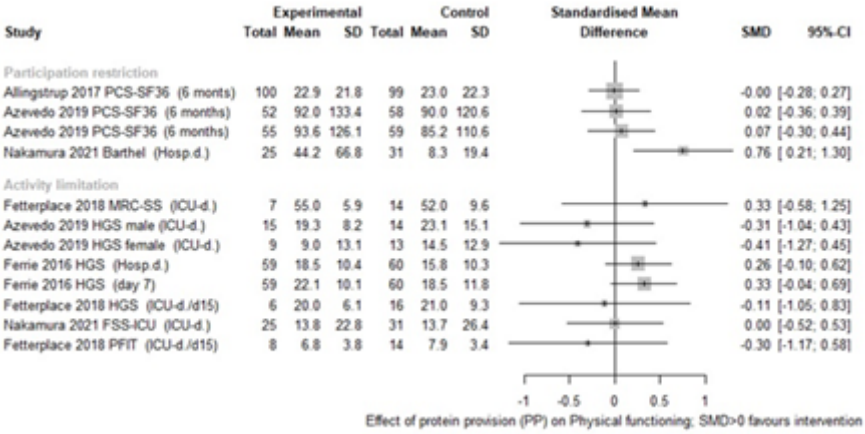

Figure 1: The effect of protein provision on physical functioning

Abbreviations: 95%CI: 95% confidence interval. Experimental: intervention group. Barthel: Barthel performance and Activities of Daily Living index. FSS-ICU: Functional Status Score for the ICU. HGS: handgrip strength (expressed in kg; reference values are age and sex dependent). Hosp.d.: hospital discharge. MRC-ss: Medical Research Counsil sum score. PCS-SF36: Physical Component Score–Short Form 36 health survey. PFIT: Physical Function in Intensive Care Unit Test. SD: standard deviation. SMD: standardised mean difference (≤0.2 small effect; 0.3-0.7 moderate effect; ≥0.8 large effect). Total: number of participants.

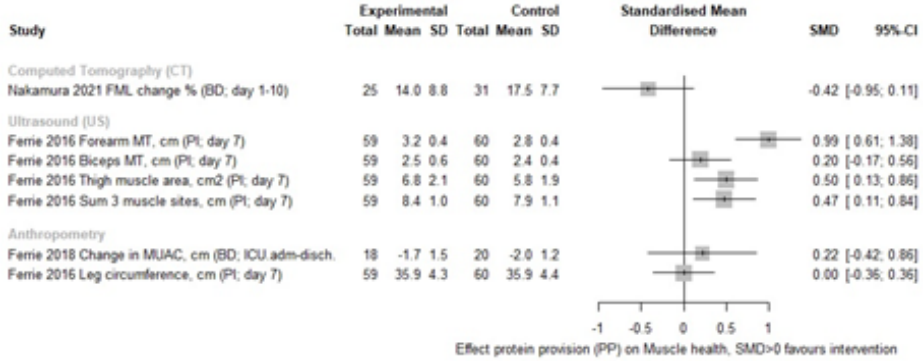

Figure 2: The effect of protein provision on muscle health

Abbreviations: 95%CI: 95% confidence interval. BD: Baseline difference. CT: Computed Tomography scan. FML: femoral muscle loss. Experimental: intervention group. MT: muscle thickness. MUAC: mid upper arm circumference. Total: number of participants. PI: post-intervention results. SMD: standardised mean difference (≤0.2 small effect; 0.3-0.7 moderate effect; ≥0.8 large effect). Total: number of participants. US: Ultra Sound technology.

Conclusion:

The effect of protein delivery, with or without exercise intervention, on outcomes in ICU survivors is seemingly controversial. Attention is urgently needed for high-quality studies and adequate protein delivery with exercise therapy during the full course of critical illness. This requires a collaboration of a multidisciplinary team of professionals, including ICU-experienced dietitians and physical therapists. To ensure that patients' personal needs are met, future research should focus more on a multi-intervention approach and its impact on long-term outcomes, especially quality of life.

2

Cumulative Corticosteroid Sparing Effect Of Anti-Interleukin-5 Biologics In Eosinophilic Asthma

J.A. Kroes1,2 , S.W.J. Zielhuis2, K. de Jong3, S. Hashimoto4, J.K. Sont5, S.W. Zielhuis1, E.N. van Roon1,2, E.H. Bel4, A. ten Brinke6, on behalf of the RAPSODI consortium.

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2 Unit of Pharmacotherapy, Epidemiology and Economics, Department of Pharmacy, University of Groningen, Groningen

3 Department of Epidemiology, Medical Centre Leeuwarden Academy, Leeuwarden, The Netherlands

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5 Department of Biomedical Data Sciences, section Medical Decision Making, Leiden University Medical Centre, Leiden, The Netherlands

6 Department of Pulmonology, Medical Centre Leeuwarden, Leeuwarden, The Netherlands

Background:

Severe asthma is a debilitating form of asthma that is refractory to regular inhaled preventer therapy, and often requires recurrent or daily use of oral corticosteroids (OCS) to reduce symptoms. High cumulative oral corticosteroid doses are associated with serious side effects. Anti-IL-5 therapy (mepolizumab, reslizumab, benralizumab) has shown to reduce the daily oral corticosteroid use in severe eosinophilic asthma. However, studies have shown that OCS-related adverse effects are dose dependent and associated with the total cumulative use of OCS rather than the mean daily dose of OCS. Knowledge regarding the cumulative oral corticosteroid exposure before and after anti-IL-5 initiation is currently lacking. Furthermore, variables associated with complete discontinuation of OCS on the long-term are currently unknown.

Objectives:

To compare the cumulative oral corticosteroid exposure over a 2-year period before and after anti-IL-5 initiation. 2. To identify variables associated with complete discontinuation of oral corticosteroids within 2 years of anti-IL-5 therapy.

Methods:

This real-world nation-wide observational registry-based study evaluated all dispensed oral corticosteroids 2 years before and 2 years after initiating anti-IL-5. The patients were adults with severe eosinophilic asthma included in the Dutch

severe asthma registry (RAPSODI) initiating anti-IL-5 treatment before January 2019. The median cumulative OCS exposures over 24 months prior to and after initiating anti-IL-5 treatment were compared using the Wilcoxon signed-rank test. To explore variables associated with complete elimination of OCS within 2 years after anti-IL-5 initiation, binary logistic regression analysis was used, selecting univariately associated factors (P-value <0.1). These variables were then entered into a multivariable logistic regression model. Non-significant variables (P-value <0.05) were removed from the model using backward elimination.

Results:

Data from 389 patients were used in the analyses. Median (IQR) cumulative oral corticosteroid exposure in the 2 years before and after anti-IL-5 initiation decreased from 2.715 g (1.150-5.539) to 1.050 g (0.300-3.640), p<0.001. In the years prior to initiating anti-IL-5 therapy, OCS exposure steadily increased. A rapid and significant reduction of OCS exposure was observed after initiating anti-IL-5 therapy, but OCS exposure was not eliminated in all patients (Fig 1.). Fifty-two percent of patients were able to discontinue oral corticosteroids within 2 years of anti-IL-5 therapy, which was independently predicted by lower (OR (95%CI) highest vs. lowest quartile 0.11 (0.052-0.24), p<0.001) and shorter prior oral corticosteroid exposure (OR(95%CI) first exposure ≤12 months vs. 12-21 months 0.42 (0.20-0.88), p=0.022).

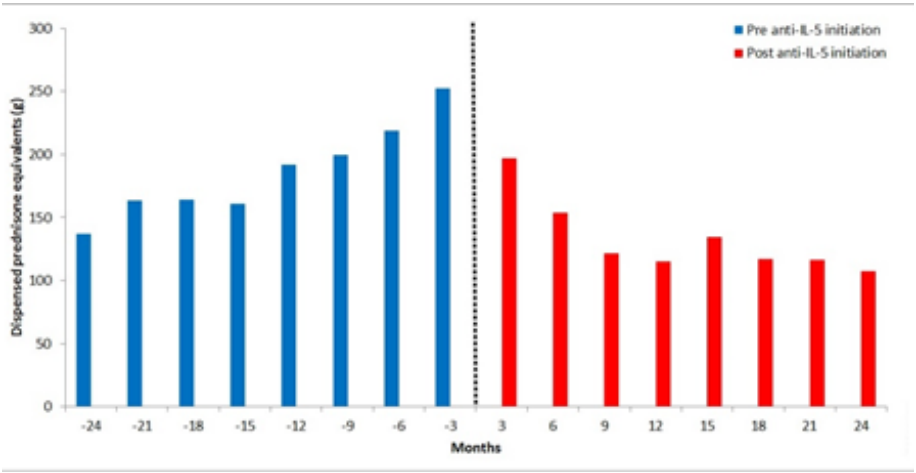

Figure 1: Course of cumulative oral corticosteroid exposure 24 months before and after initiating anti-interleukin-5, for the complete population (N=389).

Conclusion:

This real-world study showed that anti-IL-5 therapy leads to a significant reduction in cumulative oral corticosteroid exposure over a two-year period. More than half of the patients were able to completely eliminate OCS within 2 years of initiating anti-IL-5 therapy. This is especially true for patients with shorter OCS exposure and lower cumulative OCS exposure, suggesting that early introduction of anti-IL-5 therapy leads to better therapeutic results. Our large nationwide study is unique in that it provides insight into the use of OCS for 2 years prior to initiation of anti-IL-5 treatment. To our knowledge, this has never been shown before and provides important information about the course of severe eosinophilic asthma.

3

Increased prescription rate of anti-infective agents after diagnosis of myelodysplastic syndromes

Johanne Rozema1,2, Mels Hoogendoorn3, Iris Potma1, Inge ten Seldam1, Robby E. Kibbelaar4, Arjan A. van de Loosdrecht5, Nic J.G.M. Veeger6,7 and Eric N. van Roon1,2

1Unit of Pharmacotherapy, Epidemiology and Economics, Department of Pharmacy, University of Groningen, Groningen, the Netherlands; 2Department of Clinical Pharmacy & Pharmacology, Medical Centre Leeuwarden, Leeuwarden, the Netherlands; 3Department of Internal Medicine, Medical Centre Leeuwarden, Leeuwarden, the Netherlands; 4Pathology Friesland, Leeuwarden, the Netherlands; 5Department of Haematology, Amsterdam University Medical Centre, Location VUmc, Amsterdam, the Netherlands; 6MCL Academy, Medical Centre Leeuwarden, Leeuwarden, the Netherlands; 7Department of Epidemiology, University of Groningen, University Medical Centre Groningen, Groningen, the Netherlands

Gepubliceerd: Rozema J, Hoogendoorn M, Potma I, ten Seldam I, Veeger NJGM, Kibbelaar RE, van de Loosdrecht AA, van Roon EN. Increased prescription rate of anti-infective agents after diagnosis of myelodysplastic syndromes. EJHaem. 2022.

Background:

Myelodysplastic syndromes (MDS) are a disease of the elderly. These patients, often with significant comorbidities, are at increased risk for systemic infections, which may have a negative impact on their quality of life. Many MDS patients suffer from neutropenia and/or neutrophil dysfunctionality and therefore the risk for infections is of particular interest. The a priori risk for infections and the prescription rates of anti-infective agents in MDS patients are unknown.

Aim:

The objectives of this study were to investigate the prescription rate of anti-infective agents in MDS patients (lower-risk as well as higher-risk MDS) in both in- and outpatient settings, over time before and after diagnosis of MDS, and to assess differences in prescription rates according to MDS risk groups, comorbidities, neutropenia and age.

Methods:

An observational, population-based study was performed using the HemoBase Population Registry. All patients newly diagnosed with MDS in 2005-2017 were included in this study and patients were followed through December 31st, 2020. All patients alive gave informed consent. Community and hospital pharmacies

were asked to provide information about prescription and dispensing of anti-infective agents from 10 years before MDS diagnosis to December 2020. Dutch pharmacies keep a strict record of all dispensed medication in their information system for reasons of medication surveillance and reimbursement, and are obliged by law to keep records for at least 20 years.

The prescription rate was presented as prescriptions/year, days of treatment (DOT)/year, defined daily dose (DDD) per 1000 inhabitant days (DID), DDD per 100 hospital days, average daily use over time, and percentage of infection-related hospital admissions. MDS patients with International Prognostic Scoring System (IPSS-R) (very) low and intermediate were categorized as lower-risk MDS, and patients with IPSS-R (very) high as higher-risk MDS. Statistical analyses were performed using IBM SPSS version 24 and SAS version 9.

Results:

In 203 patients (70%) of a total population of 292 MDS patients detailed and complete information on prescriptions of anti-infective agents was obtained. The median age was 76 years, 70% was male, 56% lower-risk MDS, 12% higher-risk MDS and 33% of patients had an unknown IPSS-R. Patients received significantly more anti-infective agents after diagnosis compared to before: 148.7 defined daily dose/1000 days (DID) (95%CI: 146.9-150.5) and 55.1 DID (95%CI: 54.5-55.8, $p<0.01$), respectively, corresponding to median 23.5 and 7.6 treatment days/year. The percentage of patients that received anti-infective agents increased immediately after diagnosis and remained at a stable level through the end of follow-up (Figure 1). Predominantly systemic antibacterial agents were prescribed (>70%). Higher-risk (449.9 DID) and lower-risk patients (129.1 DID) both received significantly more anti-infective agents after diagnosis; comorbidities, neutropenia, and age did not show significant differences relative to prescription rates. Before diagnosis, 10% of patients had infection-related hospital admissions versus 38% after diagnosis.

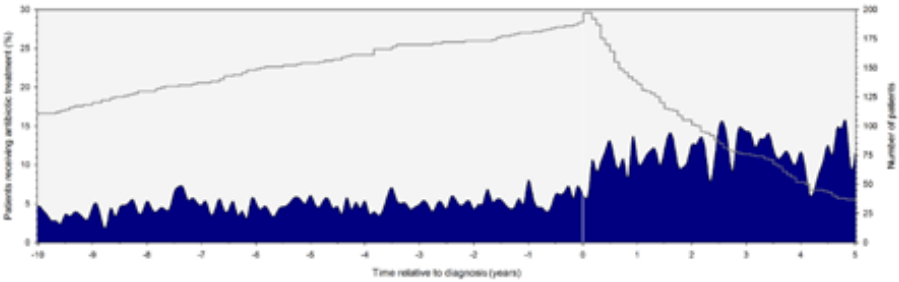

Figure 1: Average daily use per month of anti-infective agents in MDS patients over time. The left y-axis represents the percentage of patients who receive anti-infective treatment. The right y-axis and grey line represent the number of patients in the database. Time = 0 is the moment of diagnosis.

Conclusion:

In this population-based study, MDS patients received significantly more anti-infective agents compared to before diagnosis. This is the first study that has quantified the prescription rate of anti-infective agents within and beyond the clinical setting in MDS.

4

Direct superior approach (DSA) reduces short-term revision risk for total hip arthroplasty compared to posterolateral approach. Early nationwide results based on the Dutch Arthroplasty Register (LROI)

B. van Dooren1, R.M. Peters1,2, H.B. Ettema3, B.W. Schreurs4,5, L.N. van Steenbergen5, S.B.T. Bolder6, W.P. Zijlstra1

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This research was performed without a grant.

Background:

Recurrent dislocation is the most common cause of early major revision in primary total hip arthroplasty (THA) [1,2]. Risk factors associated with recurrent dislocation are surgical approach and femoral head size [1,3-4]. In the Netherlands, the posterolateral (PL) approach is the most frequently used approach in hip replacement, although the direct anterior approach (DAA) has gained popularity over the past years. The DAA has been associated with a reduced risk of revision for dislocation, compared to the PL approach. For the DAA the learning curve has been described by Peters (2022) and seems 50-100 cases.

In order to reduce dislocation rates and enhance recovery of patients operated through the classic PL approach, the direct superior approach (DSA) was developed. The DSA is a modification of the classic PL approach, in which the iliotibial band and short external rotators are spared. Based on retrospective series it may be concluded that the DSA can reduce the risk for dislocation compared to other conventional approaches [5]. However, the revision rate of the DSA has not been investigated previously using arthroplasty registry data. Therefore, there is need for stronger evidence to support the claim of reduced dislocation risk with the DSA.

Aim:

Aim We aim to investigate the reasons and risk of revision of the DSA, compared

to the DAA and PL approach. Specifically, we aim to examine the risk for revision due to dislocation, as well as the risk for revision for any other reason than dislocation.

Methods:
Demographic data, procedure and prosthesis characteristics were retrieved from the Dutch Arthroplasty Register (LROI), which is a nationwide register on all arthroplasties performed in the Netherlands that started in 2007. In total, 175,543 Eligible patients who received a primary THA using the DAA, PL approach or DSA in a Dutch hospital between 2014-2020 were included (PL: n=117,576; DAA: n=56,626; DSA: n=1,341). Competing risk survival analysis and multivariable Cox proportional hazard analyses, adjusted for potential confounders, were performed.

Results:
Crude revision rates due to dislocation after 1- and 3-years were lower for the DSA compared to the PL approach (resp. 0.2% (95%CI: 0.04-0.6) and 0.3% (0.08-0.8) versus 0.5% (0.5%-0.6) and 1.0% (0.9-1.0)). Revision rates due to dislocation for the DSA did not differ from the DAA (0.2% (0.16-0.23) and 0.3% (0.2-0.3)).
Multivariable Cox regression analysis demonstrated statistically significant lower overall revision rates for the DSA (HR 0.6 (0.4-1.0)) compared to the PL approach. Also a lower risk of revision due to dislocation was found in patients operated through the DSA (HR 0.3; (0.1-0.9)) compared to the PL approach (HR=1).

Figure 1. Crude cumulative incidence of revision for dislocation in primary THAs performed in 2014-2020 in the Netherlands including no. at risk by time in years (n=175,543).

Conclusion:

Our results suggest that DSA for total hip arthroplasty has a lower dislocation revision risk and a lower overall revision risk at 1 and 3 years postoperatively, compared to the posterolateral approach. The DSA can be promising for the future as this approach shows similarities with the PL approach. this study has a limited number of patients in the DSA subgroup (n= 1341). Therefore, further research with long term outcomes and complication rates is needed.

References

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5

Muscle function in moderate to severe asthma: association with clinical and functional outcomes

Edith Visser1,2, Kim de Jong1, Tim van Zutphen2, Huib A.M. Kerstjens3, Anneke ten Brinke4

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2 Department of Sustainable Health, Faculty Campus Fryslân, University of Groningen, Leeuwarden

3 Department of Pulmonary Medicine, University Medical Centre Groningen, Groningen

4 Department of Pulmonary Medicine, Medical Centre Leeuwarden, Leeuwarden

Background

Asthma is a heterogeneous airway disease and has significant impact on the lives of those affected. Indeed, many asthma patients report limitations in daily activities, affecting their quality of life [1]. Among the many factors that contribute to this activity limitation, low muscle mass and strength may be important [1]. Indeed, patients with severe asthma were shown to have lower muscle mass than mild-to-moderate asthma patients, despite having a higher BMI [2]. Moreover, significant loss of muscle mass after two years follow-up was seen in uncontrolled compared to controlled asthma patients [3]. However, the clinical consequences of low muscle mass and strength are still unclear.

Aim

To assess the degree of muscle mass and strength in patients with varying asthma severity, and to examine whether this is associated with functional and clinical asthma outcomes.

Methods

For this cross-sectional study, moderate to severe asthma patients were recruited from the pulmonary outpatient clinic. Muscle mass was assessed by the fat-free mass index (FFMI) – obtained from a bio-electrical impedance analysis – and excretion of creatinine (CER) measured in a 24h urine sample. Handgrip strength (HGS) was used to estimate muscle strength.

Functional asthma outcomes included lung function by spirometry and the 6-minute walking distance (6MWD). Clinical outcomes were assessed with questionnaires on asthma control (ACQ) , quality of life (AQLQ) and healthcare use.

Multivariable regression analyses were performed to assess the association between muscle mass and strength with asthma outcomes, using sex-specific tertiles of muscle parameters and age, physical activity and weight as covariates. Multiple imputation was executed to account for missing data.

Results

114 patients with moderate to severe asthma participated in this study. The mean (SD) age was 51.9 (14.4) years, 36% was male and the mean BMI was 27.7 (5.7) kg/m2. According to predefined criteria for low muscle mass and strength (<10th percentile based on a general population), 18 patients (16%) had a low FFMI, 9 patients (8%) had a low CER and 6 patients (5%) had a low HGS. This did, however, not vary with asthma severity.

Patients in the lowest tertile of muscle mass – both FFMI and CER – had statistically significant lower values of FEV1 (predicted mean (95%CI), T1: 86.1%pred (79.8-92.4) vs T3: 102.0%pred (95.4-108.7), $p<0.01$) and poorer functional exercise capacity (T1: 78.5% (73.0-84.0) vs T3: 88.2% (82.4-94.0), $p<0.05$) as measured by the 6MWD than those in the highest tertile.

Muscle strength on the contrary was related to clinical asthma outcomes, as patients in the lowest tertile of HGS had worse asthma control (Fig. 1), poorer quality of life (T1: 5.03 (4.74-5.33) vs T3: 5.52 (5.22-5.82), $p<0.05$) and a higher probability of emergency visits (T1: 0.67 (0.50-0.83) vs T3: 0.40 (0.23-0.57), $p<0.05$) than patients in the highest HGS tertile.

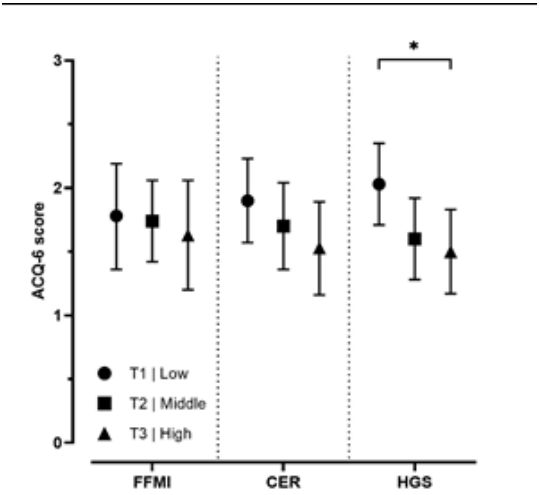

Figure 1. Predicted means of asthma control by sex-specific tertiles of muscle mass and strength. After imputation; FFMI and CER adjusted by age, physical activity and weight. HGS adjusted by age and physical activity. * p<0.05. ACQ, asthma control questionnaire; CER, creatinine excretion rate in 24h urine; FFMI, fat-free mass index; HGS, hand grip strength.

Conclusions

This study demonstrates that low muscle mass is prevalent in moderate to severe asthma patients and, along with low muscle strength, is associated with poorer clinical and functional asthma outcomes. Our results encourage longitudinal studies into muscle function as a potential target for treatment to improve asthma outcomes.

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Powertalks

1

The learning curve of the direct anterior approach is 100 cases. An analysis based on 15,875 total hip arthroplasties, using the Dutch Arthroplasty Register.

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Background:

The decision for a specific surgical approach to perform a total hip arthroplasty (THA) is predominantly determined by surgeon's preference and local hospital standards given the lack of compelling evidence in favor of one approach[1-4]. In the Netherlands, the posterolateral (PL) approach is the most frequently used approach (50% in 2020) for primary THA. However, in the last decade the direct anterior approach (DAA) has become more popular. In 2010, the DAA was used in 5% compared to 41% in 2020. Potential benefits of the DAA, an internervous approach, include early mobilisation, reduced post-operative length of stay, and low dislocation rates[1-2]. However, the approach is technically demanding with a significant learning curve for experienced surgeons[5]. For surgeons considering

to switch to DAA, it is important to know how long their expected learning curve will be before reaching a steady state.

Aim:
We aim to investigate the learning curve and survival rate of the DAA in primary THA, using data from the Dutch Arthroplasty Register (LROI).

Methods:
The LROI collects data on all patients undergoing THA in the Netherlands since 2007. Since surgeons are blinded in the LROI and the number of surgeons per hospital cannot be assessed, we were unable to assess the learning curve for the DAA on a nationwide scale. Therefore, we started a collaboration with 6 high-volume DAA arthroplasty hospitals, so individual surgeon data could be unblinded. We identified all patients who received a primary THA using the DAA in the participating hospitals between 2007-2019 (n=15,903). Procedures were ordered per surgeon, using date of operation. Using the procedure number, operations were divided into 6 groups based on the number of previous procedures per surgeon (first 25, 26-50, 51-100, 101-150, 151-200, >200 procedures). Data from different surgeons in different hospitals was pooled together. Crude cumulative incidence of revision was calculated using competing risk analyses and a multilevel time-to-event analysis was performed.

Results:
The overall 5-year revision rate for all causes for the first 25 procedures per surgeon was 2.9% (95% confidence interval (CI): 2.0-4.4%). At 5 years, a lower cumulative incidence of revision was found when the surgeon had performed 151-200 (1.8% (1.1-3.1%)) or more than 200 (1.9% (1.6-2.2%)) previous DAA THAs (fig. 1).
When correcting for possible confounders patients operated in group 1-25 (hazard ratio (HR) 1.6 (95%CI 1.1-2.4)) and 26-50 (HR 1.6 (1.1-2.5)) had a higher risk for revision compared to patients operated in group >200 THAs. Between 50-100 procedures the revision risk was increased (HR 1.3 (0.9–1.9)), albeit not statistically different. From 100 procedures onwards the HR for revision was respectively 1.0 (0.6-1.6) and 0.8 (0.5-1.4) for patients in operation groups 101-150 and 151-200.

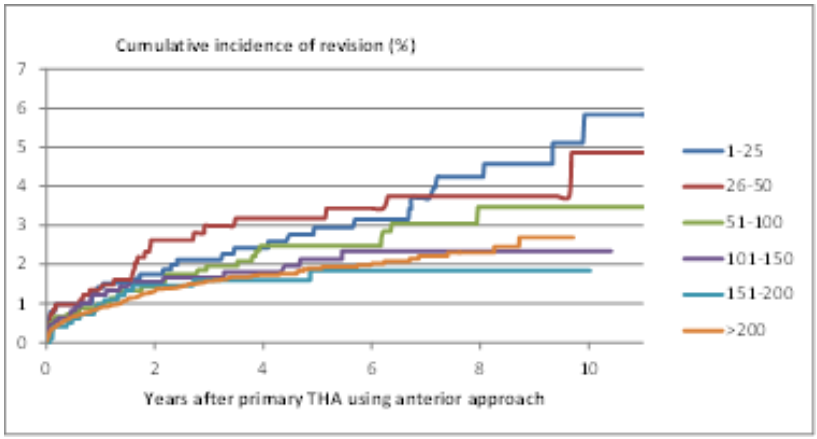

Figure Figure 1. Cumulative incidence of revision according operation group after primary THA using the direct anterior approach (n = 15,875).

Conclusions:
Dutch patients with EGFR mutated NSCLC who received first-line treatment with regular TKIs have a median OS of 20.2 months in a nationwide real-world cohort. In patients with brain metastasis, erlotinib showed superior results compared to gefitinib and was similar to afatinib.

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2

Verpleegkundig leiderschap in de ziekenhuispraktijk; Een onderzoek naar de beleving, ervaringen en zelfbeoordeling van leiderschapscompetenties door verpleegkundigen in een topklinisch ziekenhuis.

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Achtergrond:

Achtergrond In een context die onder druk staat (Lacasse, 2013) is verpleegkundige zorg onderhevig aan toename van complexe zorg, een oudere wordende patiënt en een steeds korter wordende ziekenhuisopname (UWV, 2019). Winst wordt verwacht van Leiderschap. Dit wordt omschreven als het doelbewust uitoefenen van invloed als verpleegkundige en onderscheid kan worden gemaakt in klinisch-, professioneel en moreel-ethisch leiderschap. Het wordt gerelateerd aan verbeteringen in kwaliteit van zorg en minder gemiste zorg. Daarnaast wordt leiderschap geassocieerd met meer werkplezier (Cummings et.al., 2018) en daarmee behoud vaan de verpleegkundigen (dle Zulueta, 2016). Om leiderschap verder te kunnen ontwikkelen is het zinvol eerst het eigen perspectief van verpleegkundigen ter kennen. Hierover is weinig bekend.

Doel:

Het doel is om zicht te krijgen op hoe verpleegkundigen betekenis en invulling geven aan verpleegkundig leiderschap.

Methode:

Het betreft een mixed-methods onderzoeksdesign met kwalitatieve data van 75 diepte-interviews en 24 focusgroepen over een periode van 2 jaar en kwantitatieve data van 430 verpleegkundigen van de Frenetti-Professionaliteitscan waarin ze zelf hun competenties aangeven op een hiërarchische schaal met gedragsbeschrijving. Het onderzoek is uitgevoerd onder verpleegkundigen van het MCL en in de eerste corona-lockdown bij vierdejaars Hbo Verpleegkunde studenten. Kwalitatieve analyse is gebruikt voor de interviews en focusgroepen. Tree-analyses zijn gebruikt om de onderlinge relaties tussen respondentkenmerken en competenties te onderzoeken.

Resultaten:
Verpleegkundigen zien leiderschap als een breed begrip en niet gekoppeld aan een functie. Het bestaat uit een basis van persoonlijke leiderschapscompetenties als initiatief en moed, proactieve houding en verantwoordelijkheid nemen. Het wordt duidelijk gelinkt aan het beroep, kwaliteit van zorg, inzet van EBP en onderzoekend vermogen en samenwerken. Deels wordt hier onbewust al invulling aan gegeven maar soms mist vakinhoudelijke theoretische onderbouwing van het handelen. Beïnvloedende factoren zijn deskundigheid en werkervaring, een veilige werkcultuur en werkdruk. Voorbeelden van leiderschapsgedrag worden vooral gegeven in klinisch- en moreel-ethisch leiderschap. Ook in de kwantitatieve data worden hogere scores gezien op klinisch redeneren, indiceren van zorg, persoonsgerichte communicatie en gezamenlijke besluitvorming. De kwantitatieve data laten lagere scores zien bij competenties, die linken aan professioneel leiderschap, zoals inzet EBP en onderzoekend vermogen. In de Tree-analyses blijken met name 'type functie' en 'werkervaring' het meest bepalend te zijn voor de mate van bekwaamheid op competenties. De verpleegkundigen met een Hbo-vooropleiding scoren wel hoger op competenties inzet EBP en onderzoekend vermogen.

Conclusie:
Verpleegkundigen geven al invulling aan verpleegkundig leiderschap maar er is ruimte voor verdere bewustwording van hun invloed, ontwikkeling van vakinhoudelijk theoretische onderbouwing van hun handelen en een veilige teamcultuur. Het op basis van deze resultaten ontwikkelde model voor verpleegkundig leiderschap biedt handvatten voor de ontwikkeling van verpleegkundig leiderschap in de dagelijkse praktijk, het onderwijs en vervolgonderzoek. Sterk punt in dit onderzoek is dat verpleegkundigen zelf goede voorbeelden naar voren brachten van leiderschapsgedrag, welke gebruikt kunnen worden voor 'rolmodellen' en dat participatie aan het onderzoek al een aanzet heeft gegeven tot de bewustwording van hun leiderschapsgedrag en de verbetermogelijkheden.

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3

The effect of ambient air pollution on incident adult-onset eosinophilic airway disease in the Lifelines Cohort Study.

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Background:

Adult-onset asthma and chronic obstructive airway disease (COPD) are two obstructive airway diseases that are associated with a high disease burden. They are increasingly recognized as overlapping syndromes with similarities in pathophysiological mechanisms and clinical features (1). Why adult-onset airway disease develops remains largely unclear, especially for the clinically relevant, and more often severe, eosinophilic phenotype. Air pollutants have been suggested as potential triggers (2) and evidence suggests a causal relationship between higher levels of air pollution and incident airway disease in general (3). However, this relationship has not been studied for the eosinophilic phenotype.

Aim:

To assess effects of ambient air pollution on incident adult-onset airway disease, focusing on distinct subgroups based on levels of eosinophilic inflammation.

Method:

For this longitudinal study data from the Dutch Lifelines Cohort Study was used, in which ±152,000 adults were enrolled at baseline. Among adults who were free of airway disease at baseline, incident airway disease was defined as self-reported asthma or COPD, airway obstruction or self-reported medication use for airway disease. Eosinophilic subgroups of airway disease were categorized based on the level of blood eosinophils: eosinophilic (≥0.47×109 cells/L), non-eosinophilic (≤0.17×109 cells/L) and intermediate (>0.17 & <0.47×109 cells/L). These cut-off levels have been shown to predict persistent or absent blood eosinophilia based on a single measurement in adults with new-onset asthma (4). Air pollution estimates for nitrogen dioxide (NO2), particulate matter smaller than 2.5 µm (PM2.5), ozone (O3) and black carbon were based on European air pollution models from the ELAPSE project (5). Associations between air

pollutants and incident (eosinophilic) airway disease were assessed with log-binomial regression models adjusted for sex, age, BMI, smoking status, pack years and follow-up time.

Results:

At 4.5 (SD 1.0) years follow-up, we identified 13,866 controls and 2,581 cases of incident airway disease, of whom 169 (6.5%) were eosinophilic and 1,256 (48.7%) were non-eosinophilic. Air pollution levels were below EU air quality standards for 99.9% of participants. Higher levels of NO2 and black carbon were associated with an increased risk of incident airway disease, whereas higher levels of O3 showed a decreased risk. No association was observed with PM2.5. Associations appeared more pronounced for eosinophilic vs. non-eosinophilic airway disease (Figure 1).

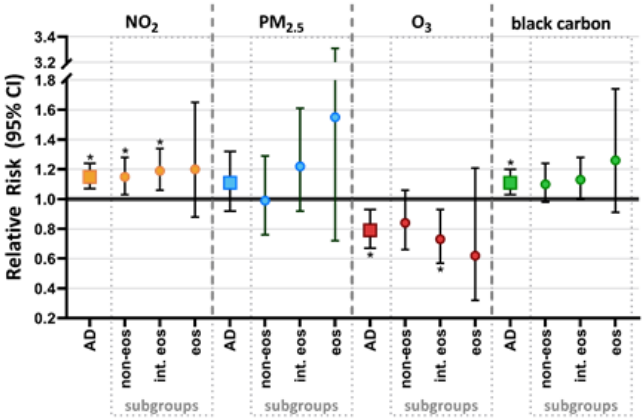

Figure 1. Relative risks (95%CI) for associations between air pollution exposure and incident airway disease (AD) and subgroups based on eosinophilic inflammation.

NO2 and O3 included in the model per 10 µg/m3, PM2.5 per 5 µg/m3 and black carbon per 0.5·10-5·m-1.

* p<0.05 cases vs. controls. AD: airway disease, eos: eosinophilic, int.: intermediate

Conclusion

In line with previous research, this study shows increased risks of incident airway disease for higher levels of exposure to NO2 and black carbon. Of interest, we observed stronger associations for the eosinophilic subtype of airway disease compared to the non-eosinophilic subgroup. Effect estimates for cases with intermediate eosinophil levels fell in between those for eosinophilic and non-eosinophilic airway disease, strengthening our observation. This suggests that air pollution may play a role in the development of the eosinophilic subtype of adult-onset airway disease, even at pollution levels below the current EU standards. Subsequent epidemiological research should consider the characterization of inflammatory subgroups, as this knowledge may eventually strengthen our understanding of etiological mechanisms behind eosinophilic airway disease.

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4

The prevalence of mental frailty in ICU survivors and informal caregiver strain: a 1-year retrospective study of the Frisian Aftercare Cohort.

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Background:
Intensive care unit (ICU) survivors often suffer from long-term mental problems and a reduced health-related quality of life (HRQoL).1,2 Symptoms of depression, anxiety, and post-traumatic stress disorder may render patients mentally frail post-ICU, resulting in impaired recovery and an increased informal caregiver burden.

Aim:
The aim of this study was to investigate the prevalence of mental frailty up to 12 months after ICU admission and pinpoint markers for early risk-assessment in clinical practice.

Methods:
We performed a single-centre retrospective cohort study in which all long-stay (≥48 hours) ICU patients visiting the specialized outpatient post-ICU clinic between 2012 and 2018 were included. Baseline characteristics, data regarding ICU admission and results of post-ICU questionnaires at three and twelve months after discharge were collected. Mental frailty was defined as clinically relevant symptoms of depression (Hospital Anxiety and Depression Scale (HADS)-Depression ≥8), anxiety ((HADS-Anxiety ≥8), or post-traumatic stress disorder (PTSD; Trauma Screening Questionnaire (TSQ) ≥6 or Caregiver Strain Index (CSI) ≥7) at 12 months after discharge.

Results:
Among the total group of 239 patients the prevalence of mental frailty post-ICU increased over time (25% at 3 months after discharge versus 38% at 12 months,

p=0.01). At baseline there were no differences between mentally frail patients and the non-frail group, except for a higher incidence of psychiatric history, with pre-existing PTSD in particular, in the group with mental frailty. ICU-characteristics were identical between groups.

At both time points, patients with mental frailty scored higher for anxiety, depression, and trauma symptoms. Caregivers of patients with mental frailty experienced higher strain and had more trauma-related complaints. At three months, 20 percent of caregivers of patients with mental frailty experienced high levels of strain compared to 11 percent in the non-frail group (p=0.042). This difference in caregiver strain was similar at 12 months post-ICU (22% versus 6%, p<0.001). Using multivariate analysis, depression score of ≥8 at three months was identified as a statistically significant marker for an almost 10-fold increase in odds of mental frailty at 12 months (OR 9.9 [95% CI 3.1-31.4]; Nagelkerke R2 = 0.320, Figure 1).

Furthermore, between-group univariate analyses indicated that at three and 12 months post-ICU patients with mental frailty scored significantly lower for mental health-related domain scores of the Research and Development (RAND)-36. Patients experiencing relevant symptoms of anxiety, depression, or trauma at three months, scored lower when it comes to mental health (68 [48-76] versus 88 [76-94]), impaired role functioning due to emotional problems (33 [0-67] versus 100 [67-100]), energy/fatigue (40 [30-55] versus 65 [55-75]), and social functioning (50 [38-75] versus 88 [63-100]) (p<0.001). Similar patterns were observed at 12 months where frail patients scored significantly lower with regards to mental HRQoL.

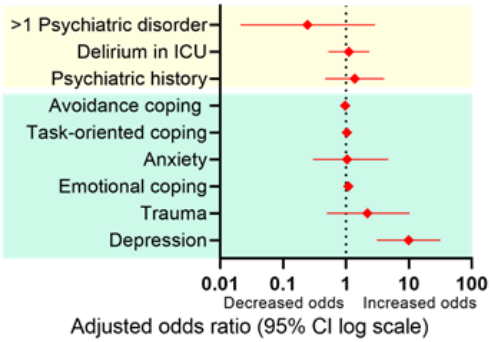

Figure 1. Adjusted odds ratios for mental frailty one year post-ICU for baseline, ICU (in yellow), and three month post-ICU characteristics (in green), corrected for age, sex, and severity of illness.

Conclusions

A significant proportion of ICU-survivors can be identified as mentally frail. Depression scores at three months may be used as a marker for long-term mental frailty in clinical practice. Mental frailty is associated with impaired HRQoL and caregiver strain, which emphasises the need for integrative aftercare programs for both the patient and their informal caregivers.

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5

An explorative analysis of patients, suffering from rheumatoid arthritis and a lymphoproliferative disorder: a population-based study.

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Background:

Inflammatory diseases and anti-inflammatory drugs are associated with the development of lymphoproliferative disorders (LPD).1 Methotrexate (MTX) is the first immunosuppressive drug reported to be associated with LPD development according to the World Health organization (WHO).2 MTX is the most common drug used in rheumatoid arthritis (RA) and treatment with MTX for RA has been hypothesized to induce the development of LPD.3,4 This causal relation of MTX for RA and LPD has been investigated in Japanese patients, however data about this relation for a primarily Caucasian population is lacking.

Aim:

The aim of the study is to describe a population of patients with LPD and a prior diagnosis of RA.

Methods:

A retrospective descriptive study was performed using a population based registry (HemoBase). All patients registered and diagnosed with diffuse large B cell lymphoma (DLBCL), Hodgkin lymphoma (HL), non-Hodgkin lymphoma (NHL) and T-cell lymphoma between 2005 and March 2022 were screened for prior diagnosis of RA. Additional patient data, including duration of treatment with MTX at LPD diagnosis, treatment for LPD and response and survival were collected from the electronic health records and subsequently analyzed with IBM SPSS version 24. Frequencies and medians were compared for different sub analyses.

Results:

Since 2005, 1,950 patients with the types of lymphoma mentioned above, were prospectively registered in HemoBase. Here, we report preliminary data after 1,683 patients were analyzed. Sixty-six patients (3.9 %) had a prior diagnosis of RA and were included in this study. Baseline characteristics of these patients are shown in table 1. DLBCL was the most common type of LPD in RA patients (68.2%). In the majority of patients MTX was discontinued at LPD diagnosis (71.2%), in 15.2% of patients MTX was already stopped before diagnosis of LPD, and in 1 patient MTX (1.5%) was continued (data missing for remaining 12% of patients). In 22.7% of patients MTX was restarted after completion of LPD treatment.

Most patients were treated with systemic therapy (81.8%) and/or radiotherapy (24.2%), MTX withdrawal as sole treatment was used in two patients. Systemic therapy consisted of chemotherapy (12%), combined chemo-immunotherapy (58.9%) or only immunotherapy with rituximab (10.5%). A trend to longer survival in RA patients with DLBCL treated with rituximab monotherapy versus (R-) CHOP was found, despite an older age in the rituximab monotherapy group.

Variable		All types of LPD (n=66)	B-cell lymphoma (n=57)	HL (n=8)
Sex, male; n (%)		27 (40.9)	24 (42.9)	2 (25.0)
Age at RA diagnosis, years; median [IQR]		56 [44-67]	56 [44-67]	52 [44-72]
MTX use for RA; n (%)		62 (93.9)	52 (92.9)	8 (100.0)
	Duration MTX use, months; [IQR]	89 [41- 118]	83 [32- 120]	102 [63-119]
Presence of other inflammatory diseases than RA				
	SLE; n (%)	3 (4.5)	3 (5.4)	0 (0.0)
	Sjögren's syndrome; n (%)	2 (3.0)	2 (3.6)	0 (0.0)
	Vasculitis; n (%)	1 (1.5)	1 (1.8)	0 (0.0)
Presence of other previous malignancies; n (%)		16 (24.2)	13 (23.2)	3 (37.5)
Age at LPD diagnosis, years; median [IQR]		71 [63-79]	72 [66-80]	63 [56-78]
Duration of RA before onset of LPD, months; median [IQR]		132 [93- 239]	132 [97-245]	101 [73-127]

HL Hodgkin lymphoma; **IQR** interquartile range; **LPD** lymphoproliferative disorder; **MTX** methotrexate; **RA** rheumatoid arthritis; **SLE** systemic lupus erythematosus

*Data of 1 patient with aggressive T cell lymphoma not shown.

Table 1. Patient characteristics at LPD diagnosis.

Conclusions This study provides a clear overview of the Frisian population of patients with LPD and prior RA. Almost 4% of patients with lymphoma were diagnosed with RA. Diagnosis of LPD was made median 11 years after RA diagnosis and after 7.4 years of MTX use. Most patients in this cohort were treated with systemic therapy. In contrast with Japanese studies, MTX discontinuation as sole treatment was infrequently performed. Future studies should focus on cessation of MTX as definitive treatment and on the effectiveness of rituximab monotherapy in patients with MTX-associated LPD.

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6

Early treatment outcomes add in predicting long-term benralizumab response in severe asthma.

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Background:

One of the novel biologics for severe eosinophilic asthma is benralizumab, targeting the IL-5-receptor alpha subunit (IL-5Ra), which has been shown to be effective in reducing asthma exacerbations and oral corticosteroid (OCS) use. However, not all patients respond equally well to the treatment and therefore it is important to predict long-term response. However, baseline characteristics alone are insufficient to predict an individual's probability of long-term benralizumab response. Early treatment effects may contribute to the prediction of long-term outcomes, as shown by a few studies that focused on predicting future asthma exacerbations or therapy response in other biologics for severe asthma. Whether the prediction of long-term response to benralizumab improves with the addition of early treatment outcomes to baseline characteristics is not yet known.

Objectives:

Objectives To (1) study whether parameters at 3 months – in addition to baseline characteristics - contribute to the prediction of benralizumab response at 1 year and to (2) develop an easy-to-use prediction tool to assess an individual's probability of long-term response.

Methods:

This was a nationwide, observational real-world study. We assessed the effect of benralizumab treatment in adult patients from the Dutch severe asthma registry (RAPSODI). Clinical outcome data are shown in medians (IQR) and outcomes at baseline were compared with outcomes at 12 months using the Wilcoxon signed-rank test. To investigate predictors of long-term benralizumab response (defined as continuation of benralizumab treatment at 12 months), binary logistic regression was used, including baseline characteristics and at 3-months Asthma Control Questionnaire (ACQ-6) score and maintenance oral corticosteroid (OCS) dose.

Results:

Data from 220 patients were used in the analysis. Benralizumab treatment significantly improved exacerbation rate (3 (2-4) exacerbations per year to 0 (0-1) per year, $p<0.01$), OCS maintenance dose (5 (0-10) mg/day to 0 (0-2.5) mg/day, $p<0.01$), ACQ-score (2.17 (1.5-3.17) to 1.0 (0.33-1.8), $p<0.01$) and FEV1 (%predicted) (73% (59-87) to 80% (66-95), $p<0.01$). 168 (76.4%) patients were classified as long-term responders. Response prediction improved significantly when 3-month outcomes were added to a predictive model with baseline characteristics only (area under receiver-operating characteristic 0.86 vs 0.70, $p<0.001$). Based on this model, a prediction tool using gender, prior biologic use, baseline blood eosinophils, and at 3 months OCS dose and ACQ-6 was developed (Fig. 1) which classified patients into 3 categories with increasing probability of long-term response (95%CI): Low: 30%(10-56), Intermediate: 77%(66-85) and High: 95%(89-99) respectively.

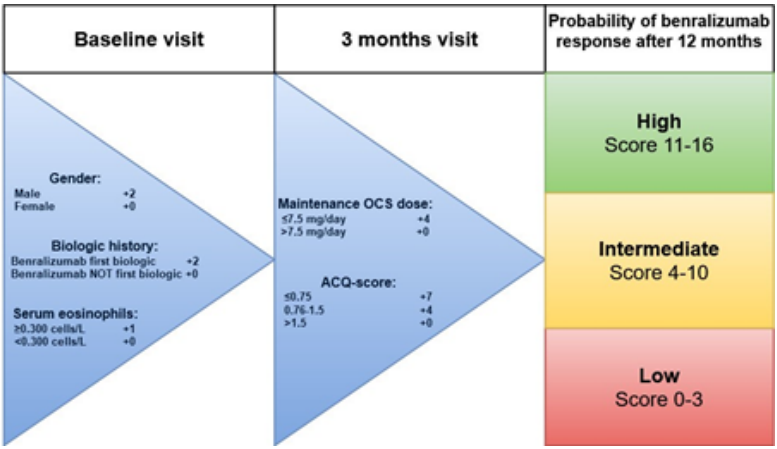

Figure 1: Benralizumab response score, combining baseline characteristics and outcomes at 3 months to predict response at 12 months.

Conclusions

This nationwide real-world study confirms the beneficial effects of benralizumab treatment on several clinical outcomes in patients with severe eosinophilic asthma. The prediction of long-term response to benralizumab was clearly improved by adding treatment outcomes at 3 months to baseline characteristics and long-term response could be determined using an easy-to-use scoring tool. This study is unique in the fact that we combined two moments in time to predict benralizumab response, which has been widely recognized as an important objective of clinical trials. Prediction tools, such as the one proposed in our study, are promising additions to clinical practice, assisting clinicians in their clinical decision-making and further optimizing treatment with costly biologics.

7

Teamwork, Clinical Leadership Skills and Environmental Factors that influence Missed Nursing Care: A qualitative exploratory study on hospital wards.

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Background:

In patient nursing care teams are constantly challenged and under pressure to provide safe, efficient and cost-effective care amid maintaining high standards of quality. When additional care tasks are assigned to nurses, the available resources to provide care often remain the same. As a result, nursing care teams are not always able to complete all of their assigned tasks and duties during their shift. This phenomenon is called missed nursing care and can be considered a global issue 1,2. Studies have shown a positive relationship between missed nursing care and adverse patient outcomes, such as medication errors, skin issues and pulmonary complications3. Reasons for missed nursing care can be attributed to nurses' work environmental factors such as staffing and time to complete an intervention1. Earlier studies on missed nursing care identified teamwork and clinical leadership skills as promising factors in inpatient care that can positively influence quality of care, and reduce missed nursing care 1,4,5. The effective use of teamwork in hospitals requires understanding what it is, how it is performed by nursing care teams, and how it is influenced by clinical leadership skills and environmental factors.

Aim:

To explore how nursing teams in clinical inpatient nursing wards perform teamwork to prevent or reduce missed nursing care and how teamwork is influenced by clinical leadership skills and environmental factors.

Methods:

A qualitative study was undertaken between January and March 2021. A total of 16 registered nurses who worked on various wards, in hospital settings, participated in three online focus groups with semi-structured interviews. An interview guide encouraged nurses to share their perceptions, experiences and knowledge regarding teamwork and missed nursing care. For analyzing data,

thematic analysis according to Braun and Clarke was conducted. For reporting this study, the Consolidated Criteria for Reporting Qualitative research (COREQ) checklist was followed.

Results:

Thematic analysis revealed four themes (Table one). First, nurses perform teamwork and clinical leadership skills in various ways. Some nurses work in pairs and have common goals, while other nurses work individual. This influences teamwork. Second, nurses are informal teachers, visible in teaching and learning from each other contributing in constructive teamwork. Third, senior nurses are seen as informal leaders and the connection between nursing wards and formal leaders, resulting in awareness of each other and the progress of patientcare. Final, environmental factors such as, the layout of a department, mix of team skills, and organizational consultation structure influences the performance of teamwork.

Themes	Subthemes
1: Teamwork, clinical leadership skills and its influence on missed nursing care	• Teamwork • Consultation moments • Offering and receiving help
2: Nurses as informal teachers and its influence on teamwork and missed nursing care.	• Sharing information • Mutual learning • Mutual learning as a result of CORONA • Providing feedback
3: Influence of formal and informal leaders on teamwork and missed nursing care.	• Ward managers • Presence of the senior nurse
4: Factors in nurses' work environment influencing teamwork and missed nursing care.	• Team skill mix • Layout of the department • Organizational consultation structure

Table 1: Themes and connecting subthemes

Conclusions This study shows that clinical leadership skills are visible in constructive teamwork, which reduces missed nursing care. In addition, nursing teams demonstrate clinical leadership skills when team members support each other to perform these skills. The presence and influence of environmental factors determines whether or not nurses can perform constructive teamwork.

Implications

Results of this study can increase knowledge regarding missed nursing care literature. Furthermore, the results can be used for developing training programs and increase awareness of the influence of teamwork and leadership skills on missed nursing care.

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8

Clinical view versus guideline adherence in ferritin monitoring and initiating iron chelation therapy in MDS patients.

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Background:

The majority of patients with myelodysplastic syndromes (MDS) need regular blood transfusions and become transfusion dependent. Blood transfusions temporarily alleviate anemia-related symptoms, but can be accompanied by adverse events, like iron overload. Each transfused red blood cell (RBC) unit contains approximately 200-250 mg iron, which the body is unable to excrete. In MDS patients who received >20 blood transfusions and with plasma ferritin levels >1000 µg/L, (inter)national guidelines advise iron chelation therapy (ICT) to reduce potential organ damage due to transfusion-mediated iron overload.

Aim:

The aim of this study was to determine the adherence to these guidelines, to determine to what extent plasma ferritin levels were monitored in daily practice and which patient-related factors contributed to monitoring plasma ferritin levels during the transfusion period.

Methods:

We performed a retrospective, population-based study, using the HemoBase Registry, in MDS patients diagnosed between 2005-2017. The HemoBase registry is a population-based registry for all hemato-oncological patients diagnosed since 2005 in Friesland, the Netherlands. Additional clinical information on blood transfusions, plasma ferritin measurements, ICT, and patient-related factors as age, comorbidities (according to the Charlson Comorbidity Index (CCI)) and

revised international prognostic scoring system (IPSS-R) risk category was collected from electronic health records and laboratory systems. RBC units were administered to patients according to and following national guidelines. Ferritin levels were measured with an immuno-assay on a Roche (Roche Diagnostics GmbH, Mannheim, Germany) or Beckman Coulter (Beckman Coulter Life Sciences, Indianapolis, IN, USA) chemistry analyzer according to manufacturer's protocol. The national guideline states that after receiving >20 RBC units, iron overload may occur, and monitoring should be performed. Therefore, as a measure of adequate guideline adherence, we defined a "per-guideline measurement" as a plasma ferritin measurement performed between the 15th-25th transfusion. In addition, we evaluated whether plasma ferritin measurements were performed at any moment in time after the 20th transfusion in patients receiving >20 transfusions. Vitality was arbitrarily defined as age ≤80 years, CCI score <2 and lower-risk MDS. Descriptive statistics were used to study patient characteristics. Logistic regression analyses were performed to analyze the likelihood of monitoring plasma ferritin levels.

Results:

In total, 237 of 292 MDS patients (81.1%) received ≥1 transfusion, and 121 (41.4%) received >20 transfusions. In 57 of these 121 patients (47.1%), ferritin measurements were performed at least once (Figure 1). Vitality was significantly associated with monitoring ferritin levels around the 20th transfusion (RR: 2.49, p=0.016). Vitality was also associated with initiating iron chelation therapy (RR: 5.99, p<0.001) and iron chelation therapy was offered to 22.3% (n=25) of eligible patients. During ICT, plasma ferritin levels were monitored in 60.0% of patients with ICT.

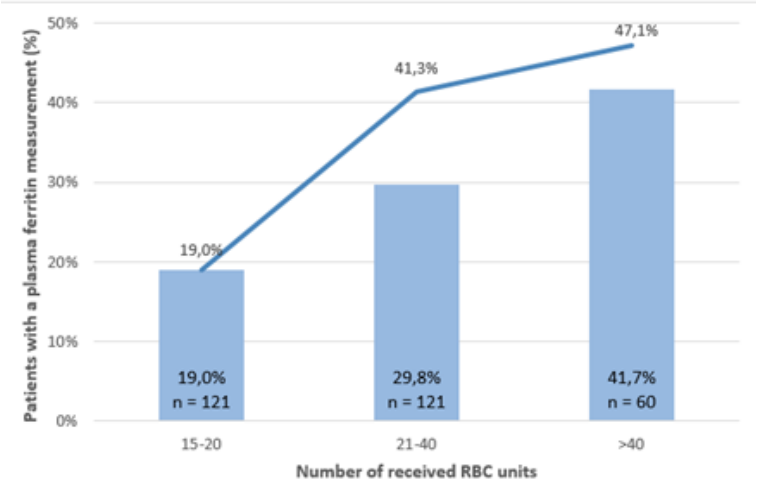

Figure 1. Plasma ferritin measurements in patients with myelodysplastic syndromes who received >20 transfusions. The bars represent the number of patients with a measurement between 15–20 transfusions, between 21–40 transfusions, and after they received >40 transfusions. The cumulative number represents the total number of patients with at least one plasma ferritin measurement since their 15th transfusion. RBC: Red blood cells.

Conclusions

In conclusion, in this population-based study, plasma ferritin levels were measured, irrespective of age, comorbidities and IPSS-R score, in approximately 60% of MDS patients with transfusions. ICT was not given to all eligible patients and during ICT, monitoring of plasma ferritin levels was not performed in all cases. Plasma ferritin levels should be monitored more often to optimize decision-making and ensure appropriate patient care.

9

Long-term effects of anti-IL-5/5Ra biologics on weight change in severe asthma patients.

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Background:
Many patients with severe asthma have overweight or obesity, which they often experience as very bothersome1,2. This may partly be due to asthma-induced exercise limitations or weight gain from oral corticosteroid (OCS) use. Fortunately, for patients with severe eosinophilic asthma, new interleukin (IL)-5/5Ra targeted biologics (mepolizumab, reslizumab, benralizumab) have become available that significantly reduce asthma exacerbations and OCS use, and improve asthma symptoms, lung function and quality of life3. However, it remains unclear whether the improvements provided by these biologics also lead to the much desired weight loss.

Aim:
This study aims to investigate the effect of anti-IL-5/5Ra biologics on weight change up to two years after treatment initiation, in a healthy weight and overweight (cut-off BMI ≥25 kg/m2) severe asthma population.
Second, we want to evaluate the clinical characteristics associated with successful (≥ 5% change from baseline) and unsuccessful weight loss in the overweight population.

Methods:
This is a real-world nation-wide prospective registry based cohort study among 389 adults included in the Register of Adult Patients with Severe Asthma for Optimal Disease management (RAPSODI) initiating anti-IL-5/5Ra treatment between December 2015 and January 2019. Data included demographic and disease-specific characteristics at baseline. Weight was assessed at treatment initiation and at 1-year and 2-year follow-up. Linear mixed model and binary logistic regression analyses were used for the statistical analysis. For the logistic regression, all variables were first tested in a univariable model. Subsequently, all

variables with p<0.2 were included into a multivariable model (backward elimination selection).

Results:

We included 389 patients (54.5% female, mean±SD age 55.3±13.0 years, 57.8% on maintenance OCS). The mean BMI was 27.8±5.0 kg/m2, with 68.4% having overweight. The mean weight at baseline was 82.17±15.97 kg, with a significant decrease in weight at follow-up of -0.27 kg per year (95%CI -0.51; -0.03, p= 0.03). However, there was great heterogeneity at the individual level with 19.5% of patients achieving weight loss of ≥5% of their baseline weight, whereas 15.9% of patients experienced weight gain of ≥5%. Within the subgroup of overweight patients (n=267), 23.7% was successful in losing ≥5% of initial weight. In the univariable analysis successful weight loss was suggestively associated (p<0.2) with female sex, late-onset asthma, nasal polyposis, obstructive sleep apnea syndrome, maintenance OCS, and cumulative OCS dose 2 years before treatment initiation. After including these characteristics in the multivariable analysis, female sex, nasal polyposis, and being on maintenance OCS emerged as independently significantly associated factors of successful weight loss (Table 1).

Clinical characteristics	N	OR Uni-variable	95%CI	P-value	OR Multi-variable	95%CI	P-value
Age	245	1.00	0.98 – 1.03	0.82			
Female sex	**245**	**1.78**	**0.97 – 3.27**	**0.06**	**2.39**	**1.05 – 5.41**	**0.04**
BMI ≥ 30 (kg/m²)	245	0.92	0.50 – 1.71	0.79			
Positive smoking history	244	0.83	0.46 – 1.50	0.53			
Late-onset asthma	**245**	**1.75**	**0.83 – 3.73**	**0.15**			
Blood eosinophil level ≥ 0.3*10⁹ cells/L	225	0.81	0.41 – 1.50	0.51			
Pre-bronchodilator FEV_1 (%predicted) ≥ 80%	232	1.35	0.73 – 2.48	0.34			
FeNO ≥ 25 ppb	172	1.42	0.64 – 3.17	0.39			
Nasal polyposis	**220**	**1.77**	**0.91 – 3.46**	**0.09**	**3.02**	**1.32 – 6.94**	**0.01**
Adrenal insufficiency	244	1.10	0.11 – 10.74	0.94			
Gastroesophageal reflux	175	0.95	0.44 – 2.04	0.89			
Obstructive Sleep Apnea Syndrome	**182**	**0.49**	**0.18 – 1.36**	**0.17**			
ACQ score	182	0.79	0.55 – 1.14	0.21			
Number of exacerbations	241						
2 – 5		1.46	0.66 – 3.21	0.35			
> 5		1.54	0.61 – 3.90	0.36			
On OCS maintenance	**245**	**6.32**	**2.84 – 14.05**	**0.00**	**5.92**	**2.26 – 15.52**	**0.00**
Cumulative OCS dose at 2 years before anti-IL-5/5Ra treatment	245						
Quartile 2 (1145 – 2715mg)		1.57	0.48 – 5.11	0.45			
Quartile 3 (2715 – 5561mg)		**5.17**	**1.80 – 14.87**	**0.00**			
Quartile 4 (> 5561mg)		**6.88**	**2.40 – 19.67**	**0.00**			

BMI = body mass index, FEV_1 = forced expiratory volume in 1 second, FeNO = fractional exhaled nitric oxide, ACQ = asthma control questionnaire, OCS = oral corticosteroid

Table 1. Odds ratios for factors potentially associated with successful weight loss (>5%) 2 years after starting anti-IL5/5Ra treatment in overweight patients with severe asthma (n=245).

Conclusions

This study in a large real-world severe asthma population with anti-IL-5/5Ra therapy shows that, albeit significant, no clinically meaningful weight change was achieved 2 years after treatment initiation. However, still 23.7% of the patients with overweight successfully managed to lose ≥5% of initial weight, which was associated with female sex, nasal polyposis, and maintenance OCS. Our results suggest that severe asthma patients with overweight and unfavorable characteristics consistent with unsuccessful weight loss, may require more support on weight loss during biologic therapy, either by clinicians or a multidisciplinary team.

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10

Adverse Drug Reactions of Intranasal Corticosteroids in the Netherlands: An Analysis from the Netherlands Pharmacovigilance Center.

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Background:

Intranasal corticosteroids (INCs) are one of the cornerstone treatment options for allergic rhinitis [1, 2]. Safety information in the summary of product characteristics (SmPC) has been (partly) gathered from a selected population that received medication under controlled and monitored conditions in clinical trials. Therefore, safety information in SmPCs may not be fully representative for observations in daily clinical practice [3]. Extensive analysis of 'real-world' safety data of INCs is lacking. Post-marketing safety information can be collected using spontaneous reporting systems, such as the Netherlands Pharmacovigilance Center Lareb.

Aim:

We analyzed the reports of adverse drug reactions (ADRs) associated with INCs in the Dutch reporting database, to gain insight into real-world safety data.

Methods:

We retrospectively analyzed ADRs of INCs (ATC: R01AD), reported to Lareb in the period between 1991 and July 1, 2020. We calculated the reporting odds ratio (ROR), a measure for the strength of an association between an ADR and drug. Reported ADRs were classified by Lareb as non-serious or serious. Serious adverse reactions include those that lead to fatal outcome, are life threatening, require (prolongation of) hospitalization, lead to significant disability/incapacity,

lead to congenital anomaly/birth defect and other medically important conditions [16]. All other adverse reactions were classified as non-serious.

Results:

We found 2263 reports of ADRs after use of INCs from 1258 individuals. A ranking of the most frequently reported ADRs and highest ROR values is shown in Table 1.

ADR	Number of reports	ROR	Lower limit ROR	Upper limit ROR	Described in SmPC
Top 20 most reported ADRs					
Headache	143	2.11	1.77	2.51	Yes
Epistaxis	124	23.76	19.59	28.82	Yes
(Partial) loss of sense of smell (Anosmia)	57	49.14	36.75	65.71	Yes
Dyspnea	53	1.55	1.18	2.05	Yes
Palpitations	52	1.97	1.49	2.6	No
Therapeutic response unexpected	38	1.53	1.11	2.12	Not applicable
Taste disorder (Dysgeusia)	30	3.65	2.53	5.26	Yes
Total loss of taste (Ageusia)	28	6.3	4.31	9.2	Yes
Change in sense of smell (Parosmia)	27	21.55	14.47	32.09	Yes
Nasal discomfort	24	56.02	35.76	87.77	Yes
Vision blurred	23	2.74	1.81	4.14	Yes
Anxiety	21	2.34	1.51	3.6	Yes
Nasal congestion	20	12.11	7.7	19.04	Yes
Visual impairment	20	2.13	1.37	3.32	Yes
Tinnitus	19	2.41	1.53	3.81	No
Throat irritation	16	7.61	4.61	12.56	Yes
Nasal septum perforation	14	463.23	186.65	1149.67	Yes
Migraine	14	2.37	1.4	4.03	No
Rhinorrhea	13	6.23	3.58	10.84	Yes
Dysphonia	13	3.3	1.9	5.72	Yes
Top 20 highest ROR-values					
Nasal septum perforation	14	463.23	186.65	1149.67	Yes
Nasal mucosal disorder	5	104.52	36.26	301.27	Yes
Reduced sense of smell (Hyposmia)	11	90.77	45.09	182.72	Yes
Nasal discomfort	24	56.02	35.76	87.77	Yes
(Partial) loss of sense of smell (Anosmia)	57	49.14	36.75	65.71	Yes
Nasal disorder	3	45.92	13.28	158.8	Yes
Nasal crusting	3	45.92	13.28	158.8	Yes
Nasal pruritus	3	38.26	11.26	130.06	Yes
Chorioretinopathy	3	38.26	11.26	130.06	Yes
Rhinalgia	3	31.31	9.36	104.73	Yes
Epistaxis	124	23.76	19.59	28.82	Yes
Cushing's syndrome	5	22.11	8.82	55.44	Yes
Reduced sense of taste (Hypogeusia)	11	21.9	11.77	40.75	Yes
Change in sense of smell (Parosmia)	27	21.55	14.47	32.09	Yes
Product odor abnormal	4	18.75	6.76	52.05	Not applicable
Abortion	3	16.02	4.96	51.69	No
Dry throat	10	14.51	7.64	27.56	Yes
Glaucoma	7	14.26	6.63	30.66	Yes
Cataract	12	14.01	7.8	25.15	Yes
Growth retardation	5	13.68	5.54	33.79	Yes
Nasal dryness	5	13.68	5.54	33.79	Yes

Table 1: Ranking of the most reported ADRs and the ADRs with the highest reporting odds ratio values.

Headache (n=143), epistaxis (n=124) and anosmia (n=57) were reported most frequently. Nasal septum perforation (ROR 463.2; 95%CI: 186.7–1149.7) had the highest ROR-value, followed by nasal mucosal disorders (ROR 104.52; 95%CI: 36.3–301.3) and hyposmia (ROR 90.8; 95%CI: 45.1–182.7).

There were 101 (5%) reports classified as serious by Lareb, including Cushing's syndrome, adrenal cortical hypofunction, and growth retardation in children.

Conclusions:
Many reported ADRs are consistent with the safety information in SmPC of INC products. The association between INCs and local nasal side effects, odor and taste changes, visual disturbances, and anxiety is described in other studies and can be explained by the mechanism of action.

Migraine, palpitations and tinnitus are not described in the SmPCs, but some are reported as serious in the Lareb database. Explanation by the mode of action is difficult and in other studies little is known about a possible association. Attention for these ADRs in clinical practice is important.

Several serious side effects have been reported, including Cushing's syndrome, adrenal cortical hypofunction, and growth retardation in children. All of these can be explained by the mechanism of action of corticosteroids. Thus, this study indicates that INCs may contribute to the development of rarer (systemic) side effects.
When prescribing INCs, healthcare providers and patients should be aware of potential ADRs and individual susceptibility. Healthcare provides should monitor growth in children and be alert for adrenal insufficiency in acute situations, especially when other medications containing corticosteroids are also used. When ADRs occur, elimination and provocation tests may be used to identify the origin of these effects at an individual level.

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1 Abstracts

Real-world effectiveness of anti-IL-5/5Ra therapy in severe eosinophilic asthma with comorbid bronchiectasis.

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Background:
Bronchiectasis is a common comorbidity in patients with asthma and is associated with increased disease severity. In patients with severe eosinophilic asthma (SEA), biologics targeting interleukin (IL)-5/5Ra have shown beneficial effects on maintenance oral corticosteroid (OCS) use and severe asthma exacerbations. However, how coexisting bronchiectasis affects the response to these treatments is unknown. Importantly, patients with comorbid bronchiectasis were excluded from the phase 3 biologic asthma trials.

Objective:
To investigate the real-world effectiveness of anti-IL-5/5Ra therapy in patients with SEA and comorbid bronchiectasis on exacerbation rate and OCS use.

Methods:
This real-world nationwide observational registry-based study evaluated data from 97 adults with SEA and computed tomography -confirmed bronchiectasis from the Dutch Severe Asthma Registry (RAPSODI) who initiated anti-IL5/5Ra biologics (mepolizumab, reslizumab, benralizumab) and had follow-up data ≥1 year. In addition, dispensing data of systemic corticosteroids (ATC-code H02AB) during 12 months before and 12 months after anti-IL-5/5Ra initiation were reque-

sted from each patient's pharmacy in order to determine the cumulative OCS exposure. The baseline moment was compared to the follow-up moment using the Wilcoxon signed-rank test.

Results:

In the total group of 97 patients (56% male, 55% non-atopic) anti-IL-5/5Ra therapy significantly reduced exacerbations in both OCS-dependent as well as non-OCS-dependent patients (Fig 1.): 75% of all patients had ≥2 exacerbations in the year prior to biologic initiation, which decreased to 22 % in the follow-up year (p<0.001). The proportion of all patients with SEA and bronchiectasis on maintenance OCS decreased from 47% to 30% (p<0.001) and in the OCS dependent patients (n=45) maintenance OCS dose decreased from median (IQR) 10.0 (5-15) to 2.5 (0-5) mg/day after 1 yr (p<0.001). The median (IQR) cumulative OCS exposure for the complete population decreased from 1.61 g (0.82-2.82) in the year before anti-IL-5/5Ra to 0.51 g (0.013-2.07) in the year after anti-IL-5/5Ra (p<0.001).

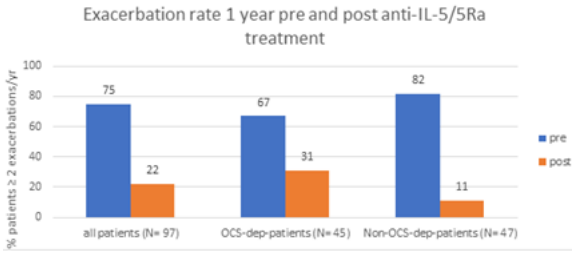

Figure 1. Annual exacerbation rate 1 year before and after anti-IL-5/5Ra treatment for the entire population, OCS-dependent and non-OCS-dependent patients.

Conclusion

This real-world study shows that anti-IL-5/5Ra therapy reduces the exacerbation rate and OCS use in patients with severe eosinophilic asthma and comorbid bronchiectasis. This study is unique in the fact we provided real-world data in a relatively large, to this date uncommonly described, subgroup of patients treated with anti-IL-5/5Ra therapy. Though an exclusion criterion in phase 3 trials, comorbid bronchiectasis should not preclude anti-IL-5/5Ra therapy in patients with severe eosinophilic asthma.

2

The feasibility and efficacy of Virtual Reality therapy during and after ICU-admission.

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Background:

Many intensive care unit (ICU) survivors suffer from newly developed or worsened long-term mental (e.g. cognitive dysfunction, emotional distress) and physical impairments (e.g. muscle weakness, reduced endurance) as a result of ICU-treatment (1). Early mobilisation reduce long-term muscle weakness after intensive care unit (ICU) admission (2). However, there are barriers (e.g. patient anxiety, lack of motivation) to implement and adhere to early mobilisation (3,4). Virtual Reality (VR) therapy may address some barriers by presenting immersive stimuli, which can increase motivation and adherence to therapy (5).

Aim:

The primary aim of this study was to examine the feasibility of VR-therapy using a VR-headset during ICU- and subsequent general ward admission. The secondary aim was to explore the efficacy of VR-therapy on physical recovery during ICU- and subsequent general ward admission.

Methods:

Ten adult ICU-patients who were mechanically ventilated for ≥ 48h and clinically capable to participate were included. VR-therapy was offered three times a week for 20 min. in addition to standard daily physical therapy and early mobilisation in the ICU and on the general ward. Training started in the ICU, when clinical staff deemed patients clinically capable to train with the VR-headset, until hospital discharge. Patients were instructed to complete puzzles on a table-like surface with increasing level of difficulty to train upper extremity functionality (Figure 1). Primary feasibility outcomes were number and duration of VR-therapy sessions, actual time spent using the VR-game, session efficiency, and adherence to VR-therapy. During each VR-therapy session, number and nature of adverse events, fatigue level (Borg Rating of Perceived Exertion Scale (6-20)), and satisfaction level (Visual Analogue Scale (0-100)) were monitored. Patients' hand-grip strength and Morton Mobility Index (DEMMI) were evaluated by a pre- and post-test at?.

Results:

Patients participated in three VR-therapy sessions of 20 min. per week with 12.9 min. of actual training time. The session efficiency ranged from 25% to 93% and patients were adherent to 60% of the VR-therapy sessions. No serious adverse events were observed. Patients rated a fatigue level of 7 to 13 and a satisfaction level of 50 to 100. DEMMI scores increased significantly from pre- (26 [24-44]) to post-test (57 [41-85], p=0.005), indicating better balance and mobility.

Figure 1: Screenshot from the VR-game.

Conclusion

The use of VR-therapy in (former) ICU-patients is feasible and is associated with an improvement in physical recovery. In the further development of VR-therapy, it should be considered that the difficulty level of VR-therapy should match with the skills of the ICU-patients. In addition, future studies should examine whether VR-therapy as a complement to conventional therapy improves muscle strength and function using larger sample sizes and randomised controlled trials.

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3

Patients' Needs concerning Patient Education in Axial Spondyloarthritis: a Qualitative Study.

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Background:
Within the EULAR recommendations patient education (PE) is stated as the basis of axial spondyloarthritis (axSpA) management, since PE contributes to reaching treatment goals.[1] However, educational needs are scarcely qualitatively studied in patients with axSpA and EULAR recommendations for PE are primarily based on research in RA.[1] The World Health Organization advocates the incorporation of qualitative research into the development of guidelines and recommendations.[2]

Aim:
The study aim was to explore experiences and needs of PE in patients with axSpA.

Methods:
An interpretive phenomenological approach was used in an iterative design, with semi-structured in-depth interviews with axSpA patients including a broad variation in characteristics. Thematic analysis was applied to translate experiences and needs from the interviews into themes.[3] To enhance credibility, data saturation, research triangulation, peer debriefing, member checking, theoretical note keeping and bracketing were applied.

Results:
Three interrelated themes regarding PE were identified from 12 interviews: illness perception, content and availability. Illness perception affects how patients experience and process PE which consequently influences coping strategies. Prognosis, treatment, and lifestyle aspects were identified as most important content of PE. Regarding availability, face-to-face PE is preferred for exploring needs, supplemented by self-education which can be freely applied. In addition, sufficient time and a comprehensible amount of information were

conveyed to be important. Participants reported a trusting patient-HCP relationship and collaboration between HCPs as prerequisites for effective PE.

Conclusions

This first bottom-up qualitative study exploring patients' experiences and needs of PE in axSpA reveals that prognosis, treatment and lifestyle aspects are important topics, and the combination of face-to-face contact and self-education is the preferred modality. Furthermore, it is essential that patients' illness perceptions are taken into account to effectively deliver PE. These results add relevant insights for future PE guidelines in axSpA.

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4

Perceived waning of biological effect by patients with severe asthma at the end of the dosing interval

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Background:
The novel biologics to treat patients with severe asthma are highly effective and used at fixed dose intervals. However, in clinical practice, dose intervals are sometimes shortened if patients experience a decrease in the effect of their biologic before the next administration. These signals from clinical practice suggest that individualized dosing of biologics may be possible and desired for a subset of patients. Such a personalized approach, in which the maintenance of asthma control and health-care costs are essential, could contribute to an optimal application of the costly biologics. Currently, we have no insight into the frequency and severity of the perceived waning of biological effect at the end of the dose interval, nor do we know what characterizes this perception and whether it is clinically relevant.

Objectives:
To explore (1) the frequency, severity and circumstances, (2) associated symptoms and (3) the association with clinical characteristics of the patient-perceived declining effect of biologics for severe asthma before the next administration.

Methods:
This was a real-world cross-sectional study, performed in the severe asthma centre of the Medical Centre Leeuwarden. Patients with severe asthma receiving biological treatment ≥4 months were included. Based on 17 patient interviews, we developed a questionnaire focusing on the waning of biological effect before the next administration. This questionnaire was distributed to 129 patients. Clinical characteristics, including asthma control (ACQ) and quality of life (AQLQ)

scores, were collected from patient files. The outcomes from the questionnaire were analysed using descriptive statistics. The association of waning of the biological effect and patient characteristics was analysed using Mann-Whitney U-tests.

Results

We approached 129 patients to fill in the questionnaire, of which 101 patients (78.3%) completed the questionnaire. Sixty-five patients (64.4%) reported a waning of biological effect and 31/65 experienced this with each injection. This manifested in a broad spectrum of symptoms, of which less stamina, shortness of breath and fatigue were most commonly reported. Patients with waning of the biological effect at the end of the dose interval had (median (IQR)) higher ACQ (1.17 (0.67-2.00) vs 0.75 (0.33-1.42), p=0.015) and lower AQLQ (5.69 (4.98-6.52) vs 6.44 (5.93-6.70), p=0.005) versus those without waning of biological effect. Twenty-eight out of 65 patients with perceived waning of biologic effect indicate that they would like to shorten their dose interval due to the waning, while 7/36 patients without this waning of effect were interested in extending the dose interval.

Conclusions

Many patients with severe asthma perceive a waning of biological effect at the end of the dosing interval, which results in a wide variety of symptoms and is associated with poorer asthma control and quality of life. Whether this is due to undertreatment with biologics and might improve with dose escalation is currently unknown. Therefore, future studies confirming our findings in a wider population and elucidating the mechanism behind this phenomenon are warranted. While this is the first study addressing this phenomenon, our findings encourage further research into the effectiveness and costs of a more personalized dosing of biologics for severe asthma.

5

Evaluation of Real-World Mepolizumab Use in Severe Asthma across Europe - the SHARP experience with privacy-preserving federated analysis.

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Background:

Many European countries have established registries of patients with severe asthma in order to collect real-world data on the impact of novel biological treatments. Unfortunately, each single country usually has a limited number of included patients, restricting the ability to deliver generalizable evidence and answer important research questions. One of the objectives of the Clinical

Research Collaboration Severe Heterogeneous Asthma Registry, Patient-centered (SHARP) is to produce real-world evidence on a pan-European scale by linking these non-standardized registries and applying federated analyses. Mepolizumab has shown clinical efficacy in prospective RCTs and real-world studies and could therefore serve as a proof-of-principle for this novel approach.

Objectives

To harmonize patient data from 10 national severe asthma registries and characterize patients receiving mepolizumab, assess its effectiveness on annual exacerbations and maintenance oral glucocorticoid (OCS) use, and evaluate treatment patterns.

Methods:

We standardized data from 5,871 adults with severe asthma in 10 European countries using the Observational Medical Outcomes Partnership (OMOP) Common Data Model. Patients who received mepolizumab between 1-1-2016 and 31-12-2021 and had follow-up data available were included. Changes in frequent (≥2) exacerbations, maintenance OCS use and dose were analyzed in a privacy-preserving manner using meta-analyses based on generalized estimation equation regression. Periods before and during the COVID-19 pandemic were analyzed separately.

Results:

Of 2,109 patients who initiated mepolizumab, 912 could be included in the analyses. Mepolizumab led to reduced exacerbations (Fig 1., Pre-pandemic group (OR;95%CI: 0.18;0.13-0.25) and Pandemic group (OR;95%CI: 0.08;0.05-0.13)) and OCS maintenance therapy (OR;95%CI: 0.75;0.61-0.92) and OCS dose (mean; 95%CI: -3.93 mg/day; -5.24--2.62) for the Pre-Pandemic group with similar trends in the Pandemic group. Marked heterogeneity was observed between registries in patient characteristics and treatment patterns with mepolizumab.

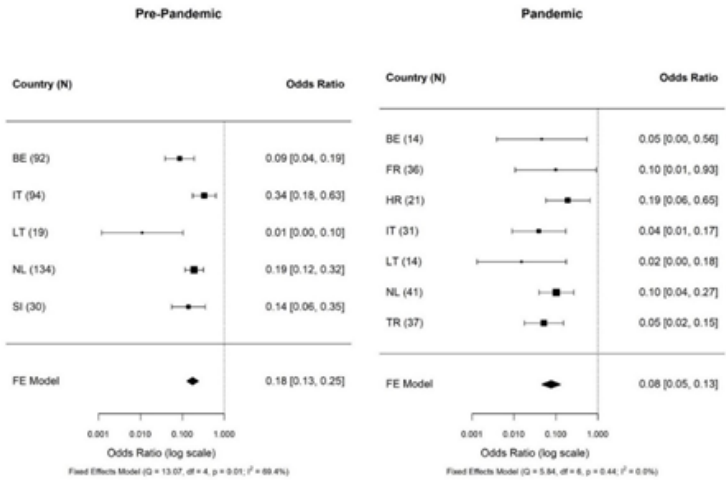

Figure 1. Forest plot of the odds of having experienced ≥2 exacerbations per year after mepolizumab initiation, compared to the year before mepolizumab initiation.

Conclusions

In this study, SHARP demonstrated the real-world effectiveness of mepolizumab in patients with severe asthma from 10 different European countries. Mepolizumab reduced asthma exacerbations and OCS use consistent with evidence generated by RCTs. We observed heterogeneity in characteristics of patients receiving mepolizumab and in treatment patterns across countries, signalling the need for further alignment of asthma management across European countries. Our study can be seen as a first, successful proof-of-principle as to whether a federated analysis approach can be used to link privacy-sensitive data from different sources. While there is still some room for improvement regarding completeness and quality of data, the SHARP federated analysis platform has great potential for future pan-European real-world severe asthma studies using patient-level data in a privacy-protected way.

6

Treatment patterns in older patients with myelodysplastic syndromes: a population-based analysis reflecting the real world.

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Background:
Treatment for myelodysplastic syndromes (MDS) is complex, options are limited, and insight into consecutive treatments is lacking. Therefore, little is known about the treatment duration of chosen treatment lines after market registration, as well as switching patterns in patients treated for MDS in a real-world setting.

Aim:
The objective of this study was to provide insights in consecutive treatments in MDS patients and to assess treatment duration, switching patterns, reasons for discontinuation or switching, and overall survival (OS) after treatment discontinuation in a real-world, unselected cohort of MDS patients.

Methods:
An observational, population-based study, using the HemoBase Population Registry, was performed identifying all persons diagnosed with MDS in 2005-2017. Patients that received one or more of the registered treatments for MDS were included in this study, i.e. hypomethylating agents (HMA), chemotherapy, erythropoiesis-stimulating agents (ESA), and/or lenalidomide. Clinical information about patient characteristics, treatment regimens and dates was collected from electronic health records. Treatment duration was defined as the time between start and termination of treatment. Reasons for treatment discontinuation were based on the information in hospital records and on the physician's judgment in cases of ambiguity, and were categorized as treatment failure, toxicity, contraindication, deceased, or other. Treatment duration and

OS were depicted using the Kaplan-Meier method. Patients were censored in case treatment was still in use by the end of follow-up. To study switching patterns, a descriptive flow chart was made for all patients receiving treatment. In this flow chart, patients were retrospectively considered 'at risk' for a consecutive treatment if they had discontinued their first treatment, with the exception of patients that deceased within one day after treatment discontinuation.

Results:

152 patients (52.1%) out of 292 MDS patients received treatment and were included in this study. The median age at diagnosis was 74.1 years (range: 27.5-92.0), the majority was male (70.4%), 55.3% of the population was considered low-risk MDS, 21.1% high-risk MDS and 23.7% of patients had an unknown risk score. HMA, chemotherapy, ESA and lenalidomide were given to 37.5% (n=57), 23.0% (n=35), 53.9% (n=82) and 5.3% (n=8) of the population, respectively. The median treatment duration of initial treatment was 5.8 months (95%CI: 1.1-10.4) for HMA, 2.3 (95%CI: 1.1-3.5) for chemotherapy, 14.3 (95%CI: 11.0-17.5) for ESA and 10.8 (95%CI: 4.7-17.0) for lenalidomide. A second treatment was given to 26.1% of patients, and of these, 28.6% received a third treatment (Figure 1). The most important reasons for treatment discontinuation were treatment failure (44.1%), toxicity (7.2%) or death (20.4%). Median OS after termination of initial, second, and third treatment was 5.8 months (95%CI: 3.0-8.7), 9.3 months (95%CI: 0.0-19.6), and 1.0 months (95%CI: 0.0-5.1), respectively.

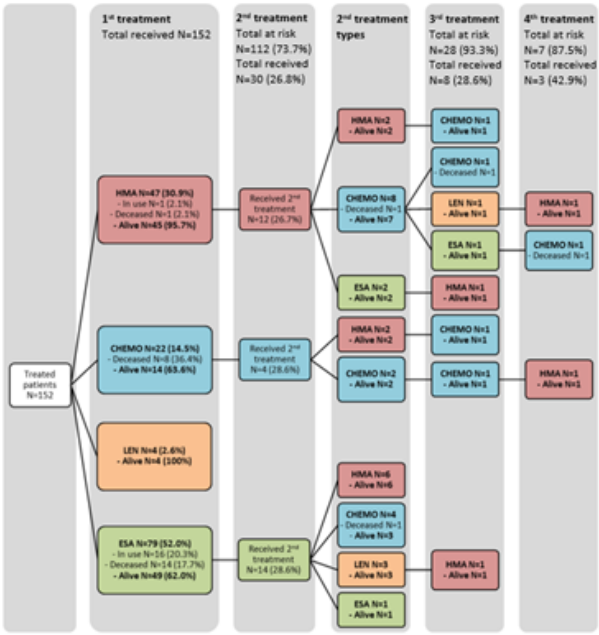

Figure 1. Flow chart of initial treatment and switching patterns of MDS patients (retrospectively). HMA: Hypomethylating agents, CHEMO: Chemotherapy, LEN: Lenalidomide, ESA: Erythropoiesis stimulating agents.

Conclusions

This study, comprising a complete 13-year cohort of MDS patients, shows the treatment outcomes based on shared decision-making in a real-world population of older MDS patients. Treatment duration and median OS after treatment discontinuation were relatively limited. There is still an urgent need for new treatment options, strategies to further optimize duration of existing treatments, and expressing realistic treatment expectations for MDS patients.

7

MINDSET: Management of infection prophylaxis in Dutch patients with myelodysplastic syndromes: a case vignette study.

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Background:

Infections are a major cause of morbidity and mortality in patients with myelodysplastic syndromes (MDS). These patients, often with significant comorbidities, are at increased risk for systemic infections, which may have a negative impact on their quality of life. Little is known about prophylactic use of anti-infective agents in MDS patients, with the exception of patients who have received chemotherapy similar to that for acute myeloid leukaemia (AML) or who received an allogenic stem cell transplant (allo-SCT). A number of studies have outlined recommendations for infection prevention in MDS patients, however, these recommendations are not always translated into guidelines and no guidelines specifically for infection prevention in MDS patients exist today.

Aim:

In order to evaluate haematologists' management of infection prevention in MDS patients, we designed an online survey for the MINDSET study. The objective of the MINDSET study was to evaluate haematologists' management of infection prevention in MDS patients using a case vignette study and to assess the availability of guidelines.

Methods:
We conducted a web-based nationwide survey, using Qualtrics XM™ (Provo, Utah, USA), amongst haematologists in the Netherlands between September 2021 and December 2021. The survey was called the MINDSET study to represent the following: Management of infections in Dutch patients with myelodysplastic syndromes: a questionnaire-based survey. The survey was accessible through an anonymous web link and distributed via e-mail on behalf of the Dutch-Belgian Cooperative Trial Group for Haemato-Oncology (HOVON). The HOVON Foundation focusses on the improvement and promotion of treatment methods for adult patients with haematological malignancies and has 254 members, representing the vast majority of all haematologists in the Netherlands. Participation in the survey was voluntary and anonymous. After five weeks of the survey being available, a reminder was sent by HOVON via e-mail. The survey was closed on December 31, 2021. The survey consisted of 12 multiple choice questions and included a set of case vignettes. Additionally, the availability of protocols was evaluated. Descriptive statistical analyses were performed using IBM SPSS version 24 and Qualtrics XM™.

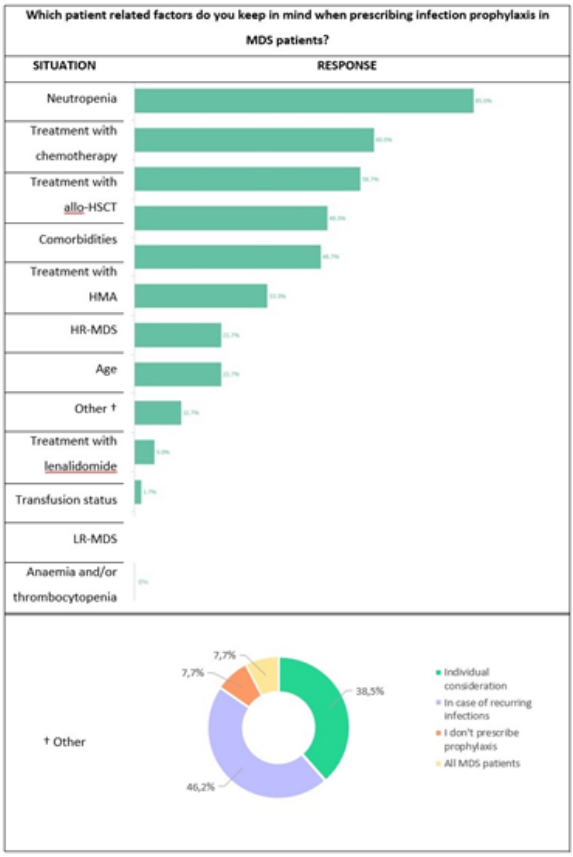

Figure 2. The answers to the question 'Which patient related factors do you keep in mind when prescribing infection prophylaxis in MDS patients?'

Results

Sixty responses were obtained (23.6%). These responses were well distributed across hospital types as well as level of experience. No protocols regarding infection prophylaxis specifically for MDS patients were received. In the case vignette of a 75-year-old MDS patient, respondents would primarily prescribe infection prophylaxis in case of recurrent infections (96.7%) and neutropenia (75.0% for absolute neutrophil count [ANC]<0.2x10^9/L and 53.3% for ANC<0.5x10^9/L), especially in combination with hypomethylating agents (80.0%), lenalidomide (66.7%) or chemotherapy (51.7%). Respondents would predominantly choose antibacterial agents (85.0%), followed by antifungal agents (71.7%).

Conclusions

This study showed diverse reasons and considerations of haematologists regarding whether to prescribe infection prophylaxis in MDS patients. Given the seriousness of infections in MDS patients, patient-tailored recommendations might be valuable in clinical decision-making

8

Enhancing the influence of nurses on missed nursing care in daily practice.

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Background:
Background Nurses are essential for delivering personalized and evidence based care grounded on science, best practices and tailored to patient needs. At the same time, nurses are under great pressure to deliver this care and are constantly prioritizing which nursing care to provide. Missed nursing care (MNC), omitted or delayed nursing care, leads to negative patient outcomes. Studies suggest MNC is closely related to nursing leadership. Hospitals where nurses have autonomy and demonstrate clinical leadership behavior (CLB) have better patient outcomes. However, nurses find it difficult to effectively apply CLB in patient care, and methods to successfully support nurses in developing CLB are lacking. Practice Development (PD) has shown promising results in tackling 'wicked problems' in nursing care in facilitating sustainable changes in practice culture. In a top-clinical hospital in the Netherlands, PD is used to develop and apply CLB in nursing teams regarding MNC.

Aim:
To explore the baseline measurements of MNC and nurses' self-perception of CLB regarding MNC in daily practice, followed by selecting a MNC care activity for continuous improvement.

Methods:
Mixed methods in 3 nursing teams were used in this first phase of PD. MISSCARE and Leadership Practice Inventory questionnaires respectively measured type and causes of MNC, and self-perception of CLB. Outcomes determined topic lists for individual interviews and focus groups.

Results:
Exercise promotion, nutritional self-management, and palliative care were frequent MNC activities and prioritized for PD. Common causes for MNC included urgent patient situations and unexpected rise in patient volume. Work processes and individual nurses prioritizing these care-activities were

considered facilitators or barriers in reducing MNC. Regarding clinical leadership, nurses perceive themselves as good role models, encourage the hearts and enable others to act. However, they have trouble inspiring others in a shared vision and challenging the status quo.

Discussion

Learning at the individual and team level likely occurred by engaging nurses in evaluating workplace and practice culture by sharing values and behavior of 'good nursing care' and finding consensus in selecting a MNC activity for PD. Defining success stories by exploring tangible CLB behavior in concrete patient care situations enhanced awareness and self-recognition as clinical leader in nurses. Utilizing these success stories may engage, empower and emancipate teams in improving underdeveloped leadership competences needed to drive MNC specific change.

Conclusion & implication for practice Developing and demonstrating CLB to drive MNC change that is evidence based and personalized to patients' needs is a shared team responsibility, requiring team effort and should take local contexts in account. Improving awareness and translating knowledge of CLB through success stories needs ongoing attention in following phases of PD.

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Early-Stage Feasibility of a Mobile Health Intervention (Copilot) to Enhance Exacerbation-Related Self-Management in Patients With Chronic Obstructive Pulmonary Disease: Multimethods Approach.

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Background:

There is an emergence of mobile health (mHealth) interventions to support self-management in patients with chronic obstructive pulmonary disease (COPD). Recently, an evidence-driven mHealth intervention has been developed to support patients with COPD in exacerbation-related self-management: the Copilot app. Health care providers (HCPs) are important stakeholders as they are the ones who have to provide the app to patients, personalize the app, and review the app. It is, therefore, important to investigate at an early stage whether the app is feasible in the daily practice of the HCPs.

Objective

The aim of this study is to evaluate the perceived feasibility of the Copilot app in the daily practice of HCPs.

Methods:

A multimethods design was used to investigate how HCPs experience working with the app and how they perceive the feasibility of the app in their daily practice. The feasibility areas described by Bowen et al were used for guidance. HCPs were observed while performing tasks in the app and asked to think aloud. The System Usability Scale was used to investigate the usability of the app, and semistructured interviews were conducted to explore the feasibility of the app. The study was conducted in primary, secondary, and tertiary care settings in the Netherlands from February 2019 to September 2019.

Results:

In total, 14 HCPs participated in this study-8 nurses, 5 physicians, and 1 physician assistant. The HCPs found the app acceptable to use. The expected key benefits of the app were an increased insight into patient symptoms, more structured patient conversations, and more tailored self-management support. The app especially fits within the available time and workflow of nurses. The use of the app will be influenced by the autonomy of the professional, the focus of the organization on eHealth, costs associated with the app, and compatibility with the current systems used. Most HCPs expressed that there are conditions that must be met to be able to use the app. The app can be integrated into the existing care paths of primary, secondary, and tertiary health care settings. Individual organizational factors must be taken into account when integrating the app into daily practice.

Conclusions

This early-stage feasibility study shows that the Copilot app is feasible to use in the daily practice of HCPs and can be integrated into primary, secondary, and tertiary health care settings in the Netherlands. The app was considered to best fit the role of the nurses. The app will be less feasible for those organizations in which many conditions need to be met to use the app. This study provides a new approach to evaluate the perceived feasibility of mHealth interventions at an early stage and provides valuable insights for further feasibility testing.

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Chronic Pain beyond Inflammation in Patients with Axial Spondyloarthritis.

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Achtergrond:

Chronic low backpain is a key presenting symptom of axial spondylarthritis (axSpA) and even in a large proportion of patients treated long-term with biological agents chronic pain is still present.[1] Central sensitization (CS) may contribute to this chronic pain in axSpA with proven impact on disease activity assessments.[2,3] In these studies, CS was assessed with a questionnaire, the Central Sensitization Inventory (CSI), not yet validated in patient with axSpA. Quantitative sensory testing (QST) is one of the most reported measurement methods to assess altered somatosensory processing of the central nervous system related to CS.

Aim:

The study aim was to investigate if patients with axSpA with an indication of CS on the CSI have greater nociceptive facilitation (e.g. higher widespread pain sensitivity and increased Temporal Summation (TS)), higher hyperalgesia (decreased Pain Pressure Threshold (PPT)) and less nociceptive inhibition (Conditioned Pain Modulation (CPM)) examined with the QST.

Methode:

Between December 2021 until June 2022 all consecutive outpatients from the Groningen Leeuwarden axSpA (GLAS) cohort, an ongoing large prospective cohort of patients with axSpA fulfilling the ASAS criteria, were asked to participate in this study. Included patients filled out the CSI (0-100) and analyses was stratified for cut-off value ≥40 indicating probable CS according to Neblett et al. (2013).[4] Patients underwent QST according to a standardized protocol, including assessment of PPTs at multiple sites, TS at three sites and CPM. PPT

measurements were performed with a handheld pressure algometer. Widespread low PPTs are indicator of CS. TS was assessed using a PinPrick 256 mN. High TS was considered to reflect CS. CPM was assessed via the ice water bucket test and reflects descending inhibition pathways. Negative values indicate normal endogenous pain inhibition and positive values indicate altered endogenous pain inhibition. Results were interpreted for patterns, because cut-off values are not available.

Resultaten:
Until June 2022 194 patients were included, median age was 50 years [IQR 38-58], 63.0% were male, 78.7% were HLA-B27+, median symptom duration was 12 years [IQR 5-24], mean ASDASCRP was 2.1 ± 1.0, 49.0% were ASDASCRP ≥2.1, mean BASDAI was 3.6 ± 2.1 and median CRP was 2.0 [IQR 1.0-5.0]. In total, 40.0% patients scored ≥40 on the CSI. In patients with CSI scores ≥40, PPTs at all sites were significantly lower and TS significantly higher at the non-painful area and painful area in comparison to patients with CSI scores < 40 (Table 1). No significant differences in TS at the non-dominant forearm and CPM at the non-dominant m. rectus femoris were found. Females had significantly higher CSI scores, lower PPTs, higher TS and higher CPM than men (data not shown).

	CSI <40	CSI ≥40
PPT		
thenar left side	37.4 ± 18.4	27.9 ± 12.4*
thenar right side	40.8 ± 19.2	31.1 ± 15.4*
m. trapezius left side	38.9 ± 20.2	30.8 ± 21.5*
m. trapezius right side	38.6 ± 20.1	30.4 ± 18.6*
m. rectus femoris left side	55.1 ± 26.2	42.9 ± 21.8*
m. rectus femoris right side	53.5 ± 26.9	38.8 ± 22.4*
m. abductor hallucis left side	36.8 ± 18.8	29.9 ± 14.3*
m. abductor hallucis right side	38.5 ± 20.0	30.9 ± 16.3*
reference area[a]	38.0 ± 22.0	28.2 ± 17.4*
painful area	31.8 [22.2-51.2]	21.5 [14.5-34.8]*
TS		
non-dominant forearm	0.5 [0.1-1.4]	0.8 [0.1-2.1]
reference area[a]	0.6 [0.1-1.3]	1.3 [0.3-2.2]*
painful area	0.7[(0.1-0.7]	1.3 [0.3-2.8]*
CPM		
non-dominant m. rectus femoris	-2.6 ± 13.2	-0.4 ± 9.3

Values are presented in: mean ± SD or median [IQR]. [a]Defined as area opposite to the most painful area. QST: Quantitative Sensory Testing; axSpA: axial spondyloarthritis; CSI: Central sensitization Inventory; PPT: Pain Pressure Threshold (Newton); TS: Temporal Summation (Visual Analogue Scale 0-10); CPM: Conditioned Pain Modulation (Newton). The Independent Samples T Test was used for normally distributed data. The Mann-Whitney U Test was used for non-normally distributed data. *Statistically significant at p<0.05.

Table 1. QST distributions of 194 patients with axSpA stratified for CSI score

Conclusion

This is the largest study to comprehensively assess CS in axSpA. Our QST results in relation to CSI scores, support previous data that CS plays a role in chronic pain in patients with axSpA. In further analysis, factors associated with CS and sex-differences will be explored.

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‘They do understand how you feel as a pregnant woman’; A multi-method study into the acceptability and feasibility of a multidisciplinary intervention for pregnant women with psychiatric and psychosocial symptoms.

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Background:
Psychiatric symptoms and psychosocial problems during pregnancy are common and can have long-lasting negative effects on both mother and the (unborn) child.[1] Lack of evidence-based interventions and barriers on patient (stigma), provider (lack of expertise) and health care (disconnected pathways) level make the treatment of these women challenging.[2] The POPP-clinic (psychiatry, obstetrics, paediatrics, psychology) try to overcome these barriers by providing multidisciplinary care and individual treatment plans. Whether multidisciplinary care is feasible, acceptable and effective in treating antenatal mental disorders is unknown.[3]

Aim:
The aim of this study was to quantitatively and qualitatively investigate the feasibility and acceptability of the POPP-clinic from the perspective of both the patient as the caregiver.

Methods:
All women registered at the POPP-clinic with a due date between 01-01-2021 and 31-07-2021 were eligible for inclusion. The study consisted of three components, including a retrospective data-analysis to the in- and outflow of patients and a quantitative and qualitative analysis of patients’ and caregivers’ experiences by a Patient Reported Experience Measure (PREM) questionnaire and semi-structured interviews. Descriptive statistics and multivariable logistic regression were performed to analyse quantitative data. Qualitative data was analysed by using inductive thematic analysis (Braun and Clarke, 2006).

Results:
Of all included patients (n=103) the retention and adherence rate were 86.4% and 65.0%, respectively. The PREM for patients (n=41) showed median rates between 8.0 and 9.0 (range 1-10). Women with psychosocial symptoms were more likely to estimate a lower effect of the treatment on their symptoms (B=2.064, S.E=.916,

p=.024, OR=7.875). The PREM for caregivers (n=16) showed median rates between 7.0 and 8.5 (range 3-10). Thematic analysis of interviews of patients (n=8) led to the following themes: 'meeting needs: personalization of the treatment plan', '(multi-disciplinary) communication as the key to an (un)successful POPP-experience', 'the more healthcare experience, the more barriers' and 'an experience of relaxation during pregnancy, birth and at the start of motherhood'. Analysis of the interviews of the POPP-specialists (n=8) showed the following themes: 'an effective personalized intervention for stabilizing psychiatric symptoms', 'an effective preventive safety net for women with psychosocial symptoms' and 'the unmet need of continuity of care'.

Conclusions

The POPP-clinic meets the needs of the patients by personalizing medicine and multiprofessional communication. Needs that are unmet and missed in current interventions provided to these women, as described by previous research.4 Both patients and caregivers see a positive effect of the intervention on psychiatric symptoms. A finding which is supported by research on multidisciplinary care and personalized medicine in (primary) mental health care. The retention and adherence rates support the feasibility of the POPP-clinic for women with and without (additional) psychosocial problems. Conclusively, this study supports the feasibility and acceptability of the POPP-clinic and provides ground for future (quantitative) prospective research to the effect of multidisciplinary care for pregnant women with psychiatric symptoms and psychosocial problems.

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Samen leren, samen werken voor goede zorg, interprofessioneel leren binnen het ziekenhuis.

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Lectoraat verpleegkundig leiderschap & onderzoek voor goede zorg, NHL Stenden/ MCL

Background:
Het thema van dit wetenschapssymposium is gericht op medicine based evidence. Zowel medicine based evidence als evidence based practice stelt zich ten doel de patiëntenzorg te optimaliseren. Ook dit onderzoek richt zich op goede zorg en op het behoud van studenten, namelijk de samenwerking tussen de verpleegkundige- en arts in opleiding. Interprofessioneel samenwerken heeft een positief effect op patiëntenzorg, werkstress, werkklimaat en werkplezier. De laatste drie factoren zijn oorzaken van uitval. Door middel van een interventie wordt interprofessioneel leren, een eerste stap naar interprofessioneel samenwerken, binnen het MCL onderzocht. Aan de hand van deze interventie wordt inzicht verkregen in de kennis en verwachtingen over elkaars beroep en hoe dit interprofessioneel leren beïnvloedt.

Aim:
Inzicht verkrijgen in de interprofessionele samenwerking tussen verpleegkundige en arts in opleiding om een cultuur te versterken waarin interprofessioneel samenwerken in de medische en verpleegkundige professie als norm en noodzaak voor goede ziekenhuiszorg en behoud van werkplezier wordt gezien.

Methods:
Binnen het MCL en het UMCG is kwalitatief onderzoek uitgevoerd middels inductieve thematische (inhouds-)analyse. Twaalf paren van een verpleegkundige (3de/4de jaars) en een semi-arts hebben drie gesprekken in een periode van maximaal vier weken gevoerd. Een masterstudent is tijdens deze leermomenten aanwezig als participerende observant. Het eerste interview was gericht op het leren kennen van elkaars perspectief op elkaars beroep. Het tweede leermoment (interventie) bespraken ze samen een gezamenlijke ervaring gedurende hun werk. Het derde leermoment reflecteerden en evalueerden zij de voorgaande gesprekken en de invloed hiervan op elkaars rollen en waarden. Daarnaast worden deze leermomenten beschouwd als

leermomenten in de beroepsontwikkeling en interprofessionele samenwerking van de deelnemende studenten, waarbij deze vorm gezien kan worden als interventie op opleidingsniveau.

Results

Alle paren ervaarden de gesprekken als waardevol. Beide professies noemden dezelfde verwachtingen en voorwaarden rondom interprofessioneel samenwerken. Studenten konden vaak niet vertellen wat de opleiding, beroep en taken van de ander inhield. Beelden als 'handen aan het bed' en 'de dokter bepaalt' werden door beide professies bevestigd. Naast inhoudsniveau is op interactieniveau verschil merkbaar. De medische student acteert in de gesprekken veelal als eerste en communiceert meer solistisch en besluitvaardig in vergelijking met de verpleegkundige student. De drie gesprekken zorgden voor meer eenheid, meer begrip van elkaars perspectief en meer bewustzijn en motivatie tot samenwerken.

Conclusions

De huidige curricula van beide beroepen zijn vooral gericht op de eigen discipline, interprofessionele feedback is er nauwelijks. Het kennen van elkaars beroep en delen van verwachtingen zorgt voor een beter begrip wat ten goede komt aan de samenwerking. Het gebruikmaken van een gezamenlijke ervaring tijdens het werk zorgt voor meer gelijkwaardigheid en veiligheid bij de studenten. Dit onderzoek laat zien dat een kleine toevoeging gedurende de opleiding zorgt voor meer begrip en gelijkheid. Advies is om interprofessioneel leren en samenwerken structureel binnen beide opleidingen aan te bieden. Verder onderzoek gericht op de invloed van onderliggende subculturen op het interprofessioneel leren en samenwerken is een vervolgstap om binnen het ziekenhuis een cultuur te versterken waarin interprofessioneel samenwerken de norm welke noodzakelijk is voor goede zorg en behoud van werkplezier.

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The direct superior approach as part of fast-track surgery in primary total hip arthroplasty: 1 year follow-up of a retrospective single-surgeon series and national benchmarking against the posterior approach.

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Background:

The Direct Superior Approach (DSA) has been developed as an alternative posterior method for primary total hip arthroplasty (THA) to reduce soft tissue and muscle damage [1]. Its less invasiveness than the traditional and most common posterior approach could make it very appropriate for implementation in fast-track surgery. Fast-track surgery protocols comprise optimization of pre, peri and postoperative care to facilitate early mobilization and accelerate the patient's rehabilitation process [2]. To our knowledge, so far, no published studies on fast-track THA have applied the DSA as part of the protocol. Also, a comparison of this approach to national standard care has not been made.

Aim:

The primary aim of this study is to evaluate the outcomes of a fast-track protocol combined with the DSA, and secondly, to benchmark patient reported outcome measures (PROMs) against nationwide outcomes of the posterior approach.

Methods:

The first 50 patients with a primary THA through fast-track DSA surgery performed in the Medical Center Leeuwarden by a single surgeon were retrospectively reviewed. PROMs (0–10 Numeric Rating Scale pain, Hip disability and Osteoarthritis Outcome Score Physical function Short form, Oxford Hip Score, EuroQol-5 Dimension), patient satisfaction (0–10 Numeric Rating Scale), length of hospital stay and adverse events until 1 year post-surgery were collected. A database of 13232 THA registries of the posterior approach was provided by the Dutch Arthroplasty Register for benchmarking of PROMs. GLM univariate analysis was used to determine differences between the 2 groups on PROMs at 3 months and 1 year follow-up, controlling for covariates.

Results:

Overall mean pain scores during admission were 1.5 (SD 0.8) in rest and 2.2 (SD 0.8) while active. Mean length of hospital stay was 50.3 hours (SD 23.3) with 92% of the patients discharged within 2 days. Mean patient satisfaction score was 8.6 (SD 1.3). Two adverse events were considered as major: a superficial surgical site infection and a THA dislocation. A total of 66 minor events were recorded of which nausea, urinary retention, hematoma and tendomyalgia were most frequently (56%) reported. The fast-track DSA patients were younger, had lower BMI, less comorbidity and better preoperative PROMs scores than the national posterior approach group. PROMs scores of the fast-track DSA patients at 3 months and 1 year suggested improved outcomes compared to nationwide posterior approach outcomes, but the differences were not statistically significant. Patient reported outcomes were limited due to missing values in 20 - 80% of the patients.

Conclusions

Fast-track THA surgery using the DSA demonstrates low inpatient pain scores, short length of stay and high patient satisfaction with few major adverse events. Postoperative PROMs scores were good to excellent, but not superior to nationwide posterior approach outcomes. This is in line with previous studies on the DSA or fast-track THA [3 - 5].

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14

Cemented or cementless revision stems for periprosthetic femoral fractures in total hip arthroplasty? Should we revise the cup too? An exploratory study based on Dutch Arthroplasty Register data.

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Background:

As the prevalence of total hip arthroplasties (THA) rises and the life expectancy improves, the incidence of complications is set to increase as well [1]. One of the complications is a periprosthetic femoral fracture (PPF), which is a fracture of the bone surrounding the prosthesis, occurring mostly around the stem. PPF are devastating complications, as they are often followed by functional deficits and significant patient morbidity. Surgery to treat such PPF can be complex, requiring fracture fixation, with or without revision of the implant based on fracture pattern, patient characteristics and clinical expertise. There is no consensus about the optimal fixation method in femoral stem revisions for a PPF [2-4]. In addition, it is unknown if an additional cup replacement is indicated, and whether or not this reduces the risk for dislocation after revision surgery.

Aim:

To compare the reasons and risk of revision between cemented and uncemented revision THAs following PPF. Furthermore, we examined the difference in risk of re-revision of a stem revision compared to a total revision (additional cup replacement) following revision of PPF.

Materials & methods:

Using the Dutch arthroplasty registry data, we performed a nationwide observational study of 1,973 patients who underwent revision surgery for PPF between 2007-2021 (Cemented: n=603; Uncemented n=1,370). Competing risk survival analysis and (time-dependent) multivariable Cox proportional hazard analyses, adjusted for potential confounders, were performed to calculate the risk of re-revision after revision for a PPF. The regression model was divided into 2 periods, since the risk of revision differed between the two fixation methods

over time.**Results:**
We found similar modes of failure between cemented and uncemented revision stems after revision for PPF. Cemented revision stems were re-revised more often for periprosthetic re-fracture compared to the uncemented group. The overall 5- and 10-year crude cumulative incidence of re-revision of the femoral stem was similar between cemented (resp. 6.6% (95%CI 4.7-9.2) and 7.9% (5.5-11.4)) and uncemented (resp. 5.7% (4.5-7.2) and 7.2% (5.6-9.3)) revision THAs.
Time-dependent multivariable Cox regression analysis demonstrated no difference in risk of revision for the uncemented fixation method (HR 1.05 (CI 0.6-1.7)) compared to cemented revision THAs (HR 1.0) during the first 1.75 years after revision surgery. After 1.75 years, the adjusted relative risk of re-revision for uncemented- compared to cemented revision stems was 0.6 (0.2-1.6), which was not statistically significant.

Finally, we found no difference in risk of re-revision between a total revision (HR 1.03 (95% CI 0.6-1.7)) compared to a stem revision (HR 1.0) only.

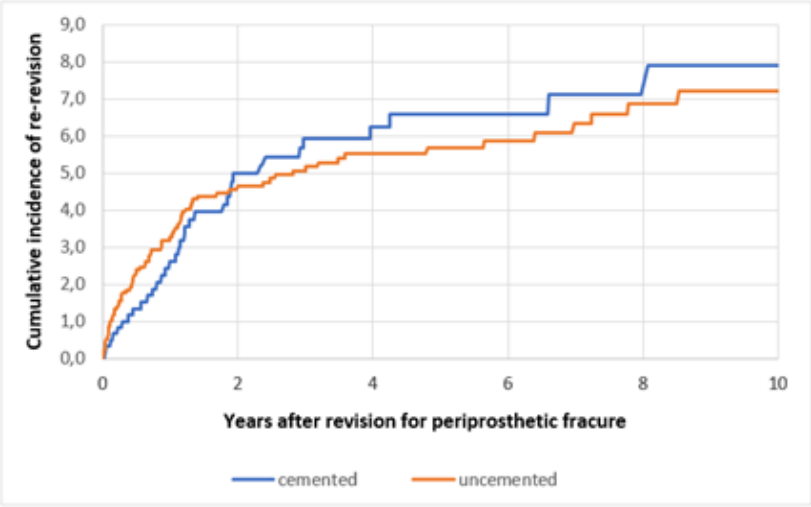

Figure 1. Crude cumulative incidence of re-revision for any reason in revision THAs following a periprosthetic fracture between 2007-2021 in the Netherlands

Conclusion

Cemented and uncemented revision stems demonstrate comparable reasons for revision and similar re-revision rates, and hence can both be used for the treatment of PPFs. However, management of PPF is complex and depends on fracture pattern, patient characteristics, bone defect size as well as experience and skills of the surgeon. Additional cup revision was not superior to stem revision only. Nevertheless, in some cases additional cup revision should be considered to reduce the risk of dislocation postoperatively, since dislocation is a common complication after this type of revision surgery.

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