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Functionele abstracts

F1 A new algorithm to monitor physical activity and compliance to a home-based exercise program in (pre)sarcopenic elderly

Lenore Dedeyne, Jorgen Wullems, Jolan Dupont, Jos Tournoy, Evelien Gielen, Sabine Verschueren.

Background: Physical exercise is known to be beneficial for sarcopenia, however, several recent studies emphasize low compliance of older people to (home) exercise programs. Objective compliance monitoring might give insight into the relationship between compliance to and the effects caused by the exercise program.

Purpose: We aimed to assess the accuracy of wearables to objectively monitor performance of a home exercise program and PA in (pre)sarcopenic older adults.

Methods: Twenty-five community-dwelling (pre)sarcopenic adults (≥ 65 years) performed the Otago exercise program (OEP) and a PA protocol (including standing, sweeping the floor, (stair) walking,...). Subjects wore an inertial measurement unit consisting of a 3D accelerometer and gyroscope (Dynaport MoveMonitor+, McRoberts). Machine learning-based algorithms were developed based on a Random Forest classifier to identify the OEP and PA protocol within the dataset. The accuracy of the algorithms to detect the performance of OEP and PA was assessed by comparing the output of the algorithms with video recording.

Results: Two algorithms were developed to extract the OEP program and the PA from the wearable data. The first algorithm aims at extracting different subparts of the OEP, such as strength (90.5% accuracy), dynamic (88.2% accuracy) and static balance exercises (79.7% accuracy). The second algorithm classified several PA's with accuracies ranging from 85.7% (stair walking) to 98.4% (sitting/lying). Conclusion Inertial measurement units can be used to monitor PA and exercise compliance with good to excellent accuracy, and to assess dose-response relationships for home-based exercise program in (pre)sarcopenic older adults.

F2 Disentangling the relationship between frailty and daily functioning in the aged: a cross-sectional analysis

Axelle Costenoble, Ivan Bautmans, Ellen Gorus, Patricia De Vriendt

Background: Frailty is associated with adverse outcomes such as hospitalisation, disabilities, and early death. Currently, a lack of consensus occurs regarding its operationalisation and its relationship with disability in activities of daily living (ADL) as definitional confusion arises between both. Therefore, we aim to clarify whether prefrail subjects have more disabilities in basic (b-), instrumental (i-), and advanced (a-)ADL compared to the robust.

Method: Robust (Fried 0/4; n=179) and prefrail (Fried 1-2/4; n=202) community-dwelling older adults (Mage=83.0 years (SD±5.0; 80.0-94.7)) were included in a cross-sectional analysis. Frailty marks were obtained from four components weight

loss, exhaustion, gait speed, and grip strength. ADL were stratified according to difficulty and complexity in three levels of functioning b-, i-, and a-ADL and a total Disability Index (DI) for each level of functioning evaluated dependency.

Results: The ANCOVA test (adjusted for gender and age) resulted in a significant difference between robust and prefrail subjects for i-ADL-DI (Mrobust=6.48; Mprefrail=9.27; p=0.006) and a-ADL-DI (Mrobust=15.25; Mprefrail=19.83; p=0.001). No significant differences were found for b-ADL-DI (Mrobust=1.81; Mprefrail=2.38; p=0.151).

Conclusion: The relation between frailty and ADL depends on the level of ADL measured. Prefrail subjects are significantly more mildly dependent in i- and a-ADL compared to the robust, though both remain mildly limited. It seems that disability in i- and a-ADL might be seen as a characteristic of prefrailty or a predictor of frailty, in contrast to b-ADL. Further research is necessary to clarify the relationship between frailty and disability in ADL.

F3 Effect of fall prevention implementation on attitude, norms, self-efficacy, knowledge, barriers, intention and behavior in nursing home staff: a pilot study

Joris Poels, Ellen Vlaeyen, Sien Valy, Koen Milisen

Purpose: This pilot study evaluated the effect of fall prevention implementation on attitude, norms, self-efficacy, knowledge, barriers, intention and behavior in nursing home (NH) staff.

Methods: We conducted a pre-post pilot study in 6 NH (n=709 measurements). Each NH committed to implement the CPG using a structured implementation plan. Data on attitude, norms, self-efficacy, knowledge, barriers, intention and behavior were collected using structured questionnaires at baseline and after an average follow-up of 20 months. Attitude (i.e. overall feeling of (un)desirability towards fall prevention), norms (i.e. perceived social pressure to apply fall prevention), self-efficacy (i.e. degree of feeling able to apply fall prevention) and intention (i.e., conscious plan to apply fall prevention) were measured using a 7-point likert-scale. Knowledge about fall prevention was measured using a 16-item true-false questionnaire. Environmental constraints (i.e. perceived reasons not to apply fall prevention) and behavior (i.e. performance of fall prevention) were measured on a 5-point scale.

Results: Attitude (PRE 5.55±1.08 POST 5.86±0.89; p<0.000), norms (PRE 4.54±1.23 POST 4.76±1.26; p<0.008), self-efficacy (PRE 4.70±1.22 POST 4.96±1.16; p<0.001), knowledge (PRE 69.38% ±14.38% POST 76.13% ±13.44%; p<0.000), intention (PRE 5.43±1.32 POST 5.65±1.29; p<0.048) and behavior (PRE OR 1 POST OR 3.34; p<0.002) towards fall prevention increased in NH staff during the implementation process. Barriers (PRE 1.58±0.55 POST 1.48±0.61; p<0.00) decreased.

Conclusion: Results show a significant improvement in attitude, norms, self-efficacy, knowledge, barriers, intention and behavior towards fall prevention in staff, suggesting a structured implementation plan may support fall prevention implementation in NH.

F4 Effectiviteit van geriatrisch co-management met fysische geneeskunde voor revalidatie van kwetsbare ouderen in het Jessa Ziekenhuis

Anthony Jeuris, Marie-Louise Van Leeuwen, Ann Callewaert

Doel: Ontwikkeling, effectiviteit en haalbaarheid van het geriatrisch co-management model met de dienst fysische geneeskunde in de revalidatie van kwetsbare ouderen in het Jessa in kaart brengen

Methode: Een geriatrisch co-management model werd ontwikkeld aan de hand van de NICHE guidelines 'In termediate care including reablement' voor ouderen. De nadruk lag op een revalidatieprogramma afgestemd op de fysiologische veranderingen die optreden bij veroudering waarbij rekening wordt gehouden met veelvoorkomende geriatrische syndromen. Medewerkers van de dienst geriatrie kregen opleiding van de dienst fysische geneeskunde in revalidatietechnieken. Patiënten worden wekelijks bedside opgevolgd door de fysische geneesheer die deelneemt aan het 2xwekelijks interdisciplinaire overleg. Metingen vonden plaats binnen 48h na overname met tweewekelijkse herevaluatie. De haalbaarheid wordt tweejaarlijks bijgestuurd aan de hand van een SWOT analyse met alle stakeholders.

Resultaten: Tussen april 2016 en oktober 2018 werden 93 patiënten opgenomen met een gemiddelde leeftijd van 84 jaar. De

voornaamste revalidatiediagnosen waren heupfractuur, revalidatie na majeure ziekte/ingreep en CVA. Tijdens een gemiddelde opnameduur van 26 dagen treedt er binnen alle functietesten een significante verbetering op. Uit de laatste SWOT analyse wordt het belang van het samen verhaal benadrukt en het verder uniformiseren van de opnameprocedure en de informatie die patiënten voor opname krijgen. Medewerkers, patiënten en familieleden rapporteren een hoge tevredenheid met het ontwikkelde model. Er lijkt een nood aan combinatie van de Sp en G bed-index classificatie.

Conclusie: Het ontwikkelde co-managementmodel slaagt erin om functieverbetering te bewerkstelligen bij zelfs de meest kwetsbare patiënten waarbij een hoge tevredenheid bij patiënten en familie wordt genoteerd.

F5 Grip work measurement with Jamar Dynamometer validation of a simple equation for clinical use

Liza De Dobbeleer, Ingo Beyer, Ivan Bautmans

Objectives: Increased muscle fatigability might explain the occurrence of fatigue, one of the major characteristics of Frailty in older persons. Surprisingly, resistance to fatigue is not commonly evaluated during geriatric assessment, possibly because older patients are often unable to perform the classic endurance tests. Previously, we developed and validated an easy test to measure of muscle fatigability during sustained maximal handgrip contraction in older persons using a Martin Vigorimeter device. This study aimed at validating the equation to estimate grip work (GW) during sustained maximal handgrip contraction, by monitoring continuously the grip strength (GS) decay using a Jamar Dynamometer (JD)-like device.

Method: Data collection took place at The National Research Centre for the Working Environment in Copenhagen, Denmark. 962 subjects, belonging to a subgroup of the Copenhagen Aging and Midlife Biobank, were enrolled. GS was recorded continuously during sustained maximal contraction until it dropped to 50% of its maximum and fatigue resistance (FR, time to fatigue expressed in seconds) was noted. GW, area under the force-time curve, was compared to its estimate which was calculated as GWestimated = GSmax*0.75*FR.

Results: Excellent correlation was found between GWestimated and GWmeasured (R^2=0.98, p<0.001). The equation slightly overestimated GW by 6.04 kg*s (95% CI[-0.08 – 12.15]) with a coefficient of variation method error of 6%. Conclusion GW estimation is a valid parameter reflecting muscle work output during a sustained maximal grip effort in healthy middle-aged community-dwelling persons when using a JD.

F6 Handknijpkracht en functionaliteit exploratief onderzoek naar hun correlatie en de predictieve waarde voor een conversie van MCI naar Alzheimer

Sara Haegeman, Ellen Gorus, David Beckwée, Patricia De Vriendt

Doel: Mild cognitive impairment (MCI) komt voor bij 11 tot 17% van de 60plussers. Daarvan zal meer dan de helft converteren naar Alzheimerdementie (AD). Het evalueren van de activiteiten van het dagelijkse leven (ADL) is van belang voor de correcte diagnostiek van MCI en AD. De uitvoering van ADL wordt deels beïnvloed door handknijpkracht. Dit onderzoek gaat het verband na tussen handknijpkracht en functionaliteit bij thuiswonende 65plussers zonder cognitieve problemen, met MCI en met AD, en of handknijpkracht en functionaliteit een voorspellende waarde hebben voor de conversie MCI-AD.

Methodologie: Aan deze exploratieve studie nemen 45 cognitief gezonde ouderen, 48 MCI-patiënten en 49 AD-patiënten deel. Handknijpkracht wordt gemeten met de dynamische Martin Vigorimeter. Functionaliteit wordt gemeten met de Brussels Integrated Activities of Daily Living (BIA). De correlatie wordt bepaald met de Spearman Rangcorrelatiecoëfficiënt, de predictieve waarde met een logistische regressie-analyse in een at random geselecteerde steekproef (n=6).

Resultaten: Er werd een zwakke tot matige omgekeerde correlatie (-0.183 tot -0.504) gevonden tussen de handknijpkracht en de BIA. Een verandering in de BIA-resultaten samen met een daling van de handknijpkracht hebben de conversie van MCI naar AD kunnen voorspellen (p=0.002).

Conclusie: De studie heeft aangetoond dat een daling in handknijpkracht overeen kan komen met een stijging in afhankelijkheid voor ADL. Deze studie werd slechts met een beperkte steekproef uitgevoerd. Het is aangewezen te herhalen met een grotere steekproef of in een longitudinaal onderzoek.

F7 Movement evoked pain in elderly patients with chronic low back pain. What are the effects of transcutaneous electrical nerve stimulation? A pilot study

Lynn Leemans, Timothy Wideman, Jo Nijs, David Beckwée

Purpose: Chronic low back pain (CLBP) is a prevalent condition among older adults and causes considerable decrease in activities of daily life. Researchers investigating pain assessments in elderly recommend considering reports on pain evoked by movement. Other recent results suggest beneficial effects for TENS in reducing pain during movement. Therefore, we aimed to investigate the effects of HeatTENS on movement evoked pain (MEP), representing a dimension of pain experience that is distinct from other pain measurements.

Methods: This will be an experimental study with a cross-over design. 20 patients with CLBP will be tested for MEP relief in 2 conditions while using the HeatTENS application and without using it. Primary outcome MEP will be measured using the Back Performance Scale and a 5 minute walk test (5MWT). Participants will first perform 5 functional tasks and will be asked to rate their pain before, during, and after each movement on a numeric rating score scale. The same principle will be used for the 5MWT for each walking-minute, 3 pain measurements will be assessed. Following secondary outcomes will be assessed at baseline pain at rest, pressure pain thresholds, temporal summation, conditioned pain modulation, CSI-, FABQ- and QoL-questionnaires

Results+conclusion: The results of this pilot study will be used to estimate true sample size and evaluate feasibility. We hope to gain more insights in potential working mechanisms of TENS and MEP. These analgesic effects can possibly lead to an increased understanding of dimensions of pain experience as well as to more comprehensive clinical assessments and treatment of LBP.

F8 The incorporation of daily functioning in the operational definition of frailty: a systematic review

Axelle Costenoble, Ivan Bautmans, Ellen Gorus, Patricia De Vriendt

Background: In an ageing society, a considerable part of the older adults is frail. Disability in activities of daily living (ADL) plays a role in frailty, though definitional confusion arises between both concepts due to the similarity of associated outcomes and frequency of co-occurrence of the two. This systematic review aims to identify which frailty instruments incorporate ADL.

Methods: A systematic search was performed in PubMed, Web of Knowledge and PsycINFO with the terms (“Aged”[Mesh] OR “Frail Elderly”[Mesh] OR “Aged, 80 and over”[Mesh]) AND Frailty AND (“Diagnosis” [Mesh] OR “Risk Assessment”[Mesh] OR “Classification”[Mesh]). The identified instruments were analysed and items were categorised in basic (b-), instrumental (i-) and advanced (a-) ADL.

Results: In total 133 articles described 158 frailty instruments. A distinction can be made between physical (n=49), multidomain (n=104), comorbidity (n=1), biomarker (n=3), and social (n=1) models of frailty. Not all ADL items aimed to assess ADL disability but measured e.g. physical activity, weakness, slowness; leading to exclusion of those items. At least one ADL was present in 56.4% of the instruments 50.0% concerned b-ADL, 38.6% i-ADL and 9.5% a-ADL.

Conclusion: ADL are present in the assessment tools, though the meaningful concept of the included ADLitems varies across those instruments and can thus be interpreted differently. Since ADL are included in some tools, confusion can occur because ADL might both be seen as characteristics and outcomes of frailty, leading to doubtful conclusions.

F9 Trunk inclination and hip extension mobility are related to 3D-accelerometry based gait alterations and increased fall-risk in older persons

Jeroen Demarteau, Bart Van Keymolen, Tony Mets, Ivan Bautmans

Purpose: The aim of this study was to investigate which aspects of spinal posture and mobility are related to 3D-

accelerometry based gait analysis, clinical correlates of gait and fall-risk in ageing. Methods Forty elderly presenting increased fall-risk (OFR, 80.6±5.4yrs), 41 old controls (OC, 79.1±4.9yrs), and 40 young controls (YC, 21.6±1.4yrs) were assessed for spinal posture and mobility (SpinalMouse®), gait analysis (DynaPort MiniMod), and functional performance (grip strength, grip work, timed-get-up-andgo-test, Tinetti-test).

Results: Compared to OC, OFR showed significantly ($p<.05$) larger trunk inclination angle (INC), smaller sacral extension mobility, slower walking speed (WS), and lower medio-lateral step and stride regularity. Thoracic kyphosis angle (TKA) was similar in all groups. INC and sacral extension mobility showed the highest correlation with WS, gait parameters, functional performance and fall-risk. INC (OR 1.14 [1.02–1.27]) and sacral extension mobility (OR 1.12 [1.01–1.26]) were significant predictors for fall-risk in elderly participants and showed fair capacity to discriminate OFR from OC (INC AUC 0.71, 70% sensitivity and 61% specificity, cut-off value -0.83°; sacral extension mobility AUC 0.71, 70% sensitivity and 73% specificity, cut-off value 8.5°).

Conclusions: Larger trunk inclination and smaller sacral extension mobility (i.e. hip extension mobility) correlate significantly with increased fall-risk, gait alterations, lower muscle performance and worse functional mobility. Contrary to our hypothesis, TKA showed no relation with parameters of gait and/or fall-risk. INC and sacral extension mobility have fair predictive value to distinguish older persons with increased fallrisk from those without and might be considered as therapeutic targets in older persons.

Medische Abstracts

M1 A geriatric patient with Bullous Pemphigoid limited to a surgical intervention area

Siddharta Lieten, Sebastian Faict, Bert Bravenboer, Tony Mets

Introduction: Bullous pemphigoid (BP) is uncommon, but becomes more frequent at older age (mainly after 70y).

Case report: We report a case of localized BP in a 78-year-old woman who developed blisters that were limited to the site of an orthopedic surgical wound, occurring one week after the intervention. The diagnosis of BP was made by histology and immunofluorescence studies. In our patient risk factors for BP were old age, and the use of a loop diuretic and a DPP-4 inhibitor. The course was benign with a good response upon topical steroid therapy. In the literature, rare cases are reported that occurred either in surgical wounds, after topical iodine application, or at the site of adhesive film dressing. In our patient, the operation area had been disinfected using Isobetadine (Hydro-alcoholic solution 5%) and had been protected with Opsite adhesive film.

Conclusion: With this report, we highlight the importance of considering BP in cutaneous lesions on surgical wounds.

M2 Accurate detection of arterial hypotension in frail elderly

Eva Van Lerberge, Mirko Petrovic, Hilde Baeyens, Julien Dekoninck

Purpose: To investigate if it is more accurate in frail older people to measure the blood pressure supine/standing position (=BP Su/St) compared with the blood pressure in sitting position (=BP Si), in order to detect arterial hypotension during the day. Guidelines for general practitioner advice to measure in the sitting position. Orthostatism and arterial hypotension increase fall risk, morbidity and mortality.

Methods: Measurements of BP Si and BP Su/St were compared to 24-h ambulatory blood pressure measurement. If ≥20% of the daytime the systolic blood pressure was below 130mmHg, it was stated that there was arterial hypotension. Cognition tests, physical tests and data about medication were collected to describe the population. All patients of the study had frailty and had a clinical suspicion of fluctuating blood pressure. Patients with dementia were included.

Results: The sensitivity of detecting arterial hypotension by measuring the BP Su/St is 69%, the PPV 96%, the sensitivity of BP Si is only 28%. The accuracy of the investigation BP Su/St is 73% and BP Si 7%. The specificity of the BP Si is 100 %.

Conclusions: In frail older patients it is better to measure the blood pressure in supine/standing position for detecting arterial

hypotension during the day. When the measurement in sitting position shows a normal BP or even hypertension, it is mandatory to measure BP in supine/standing position before increasing antihypertensive drugs in a safe way, without augmenting risks for the patient.

M3 Acute sarcopenia in hospitalized elderly; assesment of muscle stiffness through elastography

Sophie Bastijns, Anne-Marie De Cock, Maurits Vandewoude, Stany Perkisas

Background: Sarcopenia is a geriatric condition with progressive and generalized loss of muscle mass and muscle function (strength or performance). It is strongly related to negative health outcomes like increased risk of falling, frailty, reduced quality of life, more frequent hospitalizations and higher mortality. Acute sarcopenia is preliminary defined as a decline of muscle mass and muscle function within 28 days after hospitalization or acute illness, sufficiently to meet the criteria for sarcopenia.

Purpose: To assess the effect of hospitalisation and acute illness on muscle characteristics, and more specific on muscle stiffness, as determined by elastography, and to assess other factors possibly contributing to the development of acute sarcopenia.

Methods: This study is a prospective, observational study. Patients admitted to our geriatric wards at Middelheim hospital in Antwerp and hospitalized for at least 5 days will be included. Measurements of muscle quality and stiffness will be performed by elastography. Other muscle parameters will be measured by hand grip strength using a Jamar dynamometer, and by the 4-meter walking test. Other parameters will be collected via file study, laboratory results and validated questionnaires. Pedometers will be used to measure activity levels during hospitalization. Results First results will be available by January 2019. We anticipate progressive stiffening of the muscle after hospitalisation and illness. Furthermore, we expect as sociations with pre-existing conditions, laboratory values, reason of hospitalization and nutritional status before hospitalisation.

Conclusions: This study seeks to gain knowledge of the evolution of muscle stiffness after acute illnesses or hospitalization and associated parameters.

M4 Adequate vitamin D supplementation and determining factors in geriatric patients

Barbara Sonneville, Kyri Van Hecke, Nele Van Den Noortgate, Hilde Baeyens

Purpose: To determine a) the dose of vitamin D supplementation to achieve an adequate level (>30 ng/mL) and b) factors associated with an inadequate vitamin D level. Methods We retrospectively analysed 408 medical files of geriatric patients that were seen 2 times between January 2013 and June 2016. Multivariate logistic regression was applied corrected for age, sex and BMI.

Results: The mean age was 86 years; SD 4 years. Vitamin D supplementation was prescribed in 50% (41.3% a dose of 25 000 IU/fortnight) at moment 1 and in 86% (78% 25 000 IU/fortnight) at moment 2. A vitamin D level >30 ng/ml was reached in 21% and 44% respectively (P<0.001). When patients received 25.000 IU per fortnight (n = 481), 45% (n = 215) had an adequate vitamin D level. Other forms of vitamin D supplementation were not superior or inferior. Characteristics associated with a non-adequate vitamin D level, were a history of cardiovascular events (OR 2.69 {1.32-5.49}, P 0.007) and a higher renal function (Cockroft and Gault) (OR 1.03 {1.01-1.05}, P 0.007).

Conclusion: Adequate vitamin D levels are achieved in less than half of the geriatric patients even after supplementation. We found a significant association between inadequate vitamin D level and a history of cardiovascular events and higher renal function.

M5 Amoxicilline/clavulaanzuur bij geriatrische patiënten; is er nood aan een geriatrische dosering?

Bram / Tim Van Braeckel / Krols, Tania Desmet, Pieter Decock, Mirko Petrovic, Peter De Paepe

Doel: In deze studie werd nagegaan, of met het huidig amoxicilline-clavulaanzuur (AMO/CLAV) doseerregime, bij geriatrische

patiënten therapeutische AMO concentraties bereikt worden. Als secundair objectief werd de graad van correlatie tussen geneesmiddelklaring en nierfunctie onderzocht.

Methodologie: Prospectieve, monocentrische, observationele studie. Gehospitaliseerde patiënten onder intraveneuze AMO/CLAV therapie (1G/0.2G per 6h) werden geïncludeerd. Seriële bloedstalen werden afgenomen bij aanvang van therapie (dosis 1) en/of in evenwichtscondities (dosis 7 of volgende).Target attainment werd gedefinieerd als zijnde een minimum AMO middose concentratie, gecorrigeerd voor eiwitbinding (CMD), van 8 mg/L (EUCAST klinisch breekpunt voor Escherichia coli). AMO/CLAV klaringen werden berekend met behulp van niet-compartimentele PK analyse (PKsolver®, Excel 2016). Glomerulaire filtratiesnelheid (eGFR) werd ingeschat met de Cockcroft-Gault (CG) en Chronic Kidney Disease Epidemiology Collaboration (CKD EPI) formules. Correlaties werden geëvalueerd middels scatterplots en Pearson correlatiecoëfficiënt.

Resultaten: Elf patiënten werden geïncludeerd met een gemiddelde leeftijd van 85 jaar (SD 3 jaar) en een mediaan aantal bloedstalen van 6 (range 4-10) per patiënt. Bij aanvang van therapie was de gemiddelde AMO CMD 12,8 mg/L (SD 4,8 mg/L). CMD was boven 8 mg/L bij 90% van de patiënten (n=10). In evenwichtscondities was de gemiddelde AMO CMD 10,6 mg/L (SD 2,9 mg/L). CMD was boven 8 mg/L bij 75% van de patiënten (n=4). Pearson correlatiecoëfficiënten tussen AMO klaring en eGFR op basis van CG, CKD-EPI bedroegen respectievelijk 0,46 en 0,45.

Conclusie: Deze pilootstudie toont aan dat voor AMO de huidige dosering lijkt te volstaan. Doseringsaanpassingen van AMO/CLAV op basis van eGFR lijken niet aangewezen in deze patiëntpopulatie.

M6 Comparison of muscle fatigability measured by Martin Vigorimeter and Jamar Dynamometer

Liza De Dobbeleer, David Beckwée, Ingo Beyer, Ivan Bautmans

Purpose: The fatigue resistance (FR) test -defined as the time during which grip strength drops to 50% of its maximum during sustained contraction- has been validated for Martin Vigorimeter (MV) to objectively measure the exhaustion component of Frailty. However, many researchers and clinicians are using Jamar Dynamometer (JD).

Methods: In 618 young healthy controls (<30y), 660 community-dwelling adults (≥30y) and 50 hospitalized patients (≥70y) FR was recorded with MV and JD, the same day in a random order with at least 1h rest interval. Patients were assessed within the first 7 days after admission. If subjects participated in sports, measurements were performed at least 12h after the last intensive physical activity.

Results: FR scores differed between both handgrip devices, with FR measured by MV (55.7±35.0s) being significantly ($p<0.001$) higher than when measured by JD (34.2±18.4s). When FR scores were studied for men (MD=18.5±29.3s, 95%CI[16.2-20.8]) and women (MD=24.4±34.1s, 95%CI[21.8-27.0]) separately, similar results were found. In addition, this difference remained present when taking into account the clinical condition and sex. Moreover, Bland-Altman plots show the difference between both devices increases with higher FR scores, highlighting the longer participants could sustain the FR, the higher the difference in FR measured with both devices. This was seen for all participants ($R2=0.364$) and for men ($R2=0.305$) and women ($R2=0.402$) separately (all $p<0.001$).

Conclusion: FR scores obtained with MV and JD aren't interchangeable. We assume JD is unable to identify subjects with higher levels of muscle endurance and that MV might be more suitable for measuring muscle FR.

M7 CPR in patients ? 80 years outcome and perception of (in)appropriateness by clinicians working in emergency departments and ambulance services,

Patrick Druwé, Koenraad Monsieurs, Dominique Benoit, Ruth Piers

Purpose: To determine the prevalence of perception of inappropriate cardiopulmonary resuscitation (CPR) in patients ≥ 80 years encountered by doctors, nurses and paramedics working out-of-hospital and in emergency departments; and its relation to patient outcome.

Methods: Subanalysis of a cross-sectional survey conducted in 24 countries (REAPPROPRIATE), asking clinicians about their

perception of appropriateness of the last cardiac arrest they encountered, and subsequently about details of the resuscitation circumstances, and whether the patient was discharged alive from hospital.

Results: Of the 4018 participating clinicians, 775 (19.3%) performed their last CPR attempt in patients ≥ 80 years. The CPR attempt was perceived as appropriate by 410 (52.9%) clinicians, 225 (29.0%) were uncertain about its appropriateness and 140 (18.1%) perceived inappropriateness. The survival to hospital discharge was 11/323 (3.4%), 2/196 (1.0%) and 3/130 (2.3%) respectively (p=0.23). In total, 41/775 (5.3%) CPR attempts were performed in the presence of a known therapy restriction. Non-shockable rhythms accounted for 552/630 (87.6%) of CPR attempts. Whereas the survival to hospital discharge of patients with non-shockable arrests was barely 7/481 (1.5%), only 113/552 (20.5%) clinicians perceived inappropriateness. Survival to hospital discharge of 124 CPR attempts performed in a longterm care facility was 0%; however, only 35/124 (28.2%) clinicians perceived inappropriateness.

Conclusions: The outcome of CPR in patients ≥ 80 years with non-shockable rhythms or residing in nursing homes is extremely poor. Emergency clinicians, however, seldomly question the appropriateness of CPR in these conditions. A professional and societal debate seems warranted in order to prevent unnecessary harm inflicted by futile CPR attempts.

M8 Hypoglycemic overtreatement in geriatric patients with type 2 diabetes evolution from 2008 to 2015

Marie Germanidis, Antoine Christiaens, Séverine Henrard, Benoit Boland

Purpose: Antidiabetic medications should be prescribed at lower intensity in geriatric patients to avoid low glycated hemoglobin (HbA1c<7,5%). This study aimed to analyze the 8-last-year-evolution of hypoglycemic overtreatment in patients with type 2 diabetes.

Methods: Cross-sectional retrospective study of 371 consecutive patients admitted to an acute geriatric ward in a Belgian university hospital. Included patients were ≥75 years, diagnosed with type 2 diabetes, treated at home with antidiabetic treatment expressed in Defined Daily Dose (DDD) and at least one geriatric criteria as defined by the EDWPOP* (Nursing home, dementia, dependency ≥2 activities of daily living, polypathology). The patients were assigned into 2 groups for analysis, according to year of their inhospital admission (Group 1=2008-2012 (n=151); Group 2=2012-2015 (n=170). Overtreatment was defined as hypoglycemic prescription (insulin, sulfonylurea or glinide) associated with HbA1c<7.5%.

Results: The 2 groups of patients were similar in terms of age, sex ratio and geriatric profile (84.3 years; 54% women; median geriatric criteria=2). Prevalence of overtreatment was 63.8% in group 1 and 65.3% in group 2 (p=0.91). Hypoglycemic treatment DDD in patients with HbA1c<7.5% was 0.63 in group 1 and 0.55 in group 2 (p=0.85).

Conclusions: Despite the recommendations of deintensification for geriatric patients in the clinical practice guidelines released since 2012*, no improvement was observed between 2008 and 2015.

* “Diabetes Mellitus in Older People Position Statement on behalf of the International Association of Gerontology and Geriatrics (IAGG), the European Diabetes Working Party for Older People (EDWPOP), and the International Task Force of Experts in Diabete.” JAMDA13(2012)497-502

M9 Impact of a complex intervention on the appropriateness of prescribing for nursing home residents (COME-ON Study) results of a cluster randomized controlled study

Goedele Strauven, Pauline Anrys, Eline Vandael, Séverine Henrard

Purpose: To investigate the impact of a complex intervention on the appropriateness of prescribing for nursing home residents (NHRs).

Methods: A cluster-randomized controlled trial was set up. The complex intervention consisted of repeated interdisciplinary case conferences (ICC) involving the general practitioner (GP), the pharmacist and the nurse, with the aim to perform a medication review for each included NHR. The ICC were supported by a blended training program and local concertation (discussion on the appropriate use of specific medication classes on the nursing home (NH) level). Control NHs delivered

usual care. The primary outcome measure related to the appropriateness of prescribing and was considered successful when at least one potentially inappropriate medication (PIM) or potentially prescribing omission (PPO), that was present at baseline, had been solved at end of study, and when there was no new PIM or PPO at the end. Secondary outcomes included medication use and clinical outcomes.

Results: 54 NHs (24 intervention; 30 control) and 1804 NHRs (847 intervention; 957 control) participated in the study. Using a three-level mixed effects model accounting for clustering of the data, a significant effect in favor of the intervention was observed (odds ratio 1.479 [95%CI 1.062-2.059, p=0.021]). Clinical outcomes did not significantly differ between groups, except for the mortality rate that was significantly higher in the intervention group. The median number of medications did not change over time within the two groups.

Conclusions: The complex intervention tested in the COME-ON study was successful in improving appropriateness of prescribing in NHs.

M10 Impact van spiermassa en graad van myosteatose van de psoasspier op mortaliteit en functionaliteit bij oudere patiënten met kanker.

Ariën Femke, Abdelbari Baitar, Maurits Vandewoude, Anne-Marie De Cock

Doel: Bij de bepaling van een oncologisch beleid bij ouderen wordt een geriatrische evaluatie gebruikt. Hierin is de bepaling van spiermassa niet opgenomen. We willen nagaan of de spiermassa en de graad van myosteatose van de psoasspier op het moment van een oncologische diagnose bij ouderen, een voorspellende waarde heeft op functionaliteit en mortaliteit.

Methodologie: In het oncologisch dagziekenhuis werd een cohort van 70-plussers gescreend voor voedingsstatus en functionaliteit. Aanvullend werd op CT abdomen, ter hoogte van L3, de oppervlakte van de dwarsdoorsnede van de Musculus psoas en de pixeldensiteit, als maat voor de vervetting, bepaald. Tijdens de follow-up werd mortaliteit geregistreerd. Pearson correlation werd bepaald tussen de klinische en spiermassa parameters.

Resultaten: Tweeënzeventig patiënten werden onderzocht (29 mannen en 43 vrouwen). De gemiddelde leeftijd was 81 jaar. De gemiddelde overleving was 622,8 dagen (range 4dagen – 1947dagen). De gemiddelde MNA was 8 (range 0-14) en gemiddelde ADL was 8 (range 0 – 21). De gemiddelde spieroppervlakte was 5.81cm^2, (range 1.6cm^2 – 12.3cm^2). De gemiddelde pixeldensiteit was 32.69HU, (range 5.8HU – 80.5HU). Deze parameters waren onderling significant positief gecorreleerd (CCoef 0.392). Er was geen significante correlatie aantoonbaar tussen de oppervlakte of de densiteit van de spier en de mortaliteit, MNA of ADL.

Conclusie: De oppervlakte van de dwarsdoorsnede van de Musculus psoas ter hoogte van L3 is gerelateerd aan de graad van myosteatose van de spier. In deze kleine cohorte kon er geen correlatie aangetoond worden tussen spiermassa en ondervoeding, functionaliteit en mortaliteit. Verder onderzoek is nodig.

M11 In case of Gemella haemolysans bacteremia consider the colon

Anke Vanhauwaert, Sven Martens, Wim Maurissen, Véronique Bulens

Purpose: Discuss a case of Gemella bacteremia

Case report: We report a case of Gemella haemolysans sepsis. A 79-year old male patient presented with fever, night sweats and a history of a prosthetic bovine aortic valve and penicillin allergy. Gemella haemolysans was isolated from blood cultures. Antibiogram showed sensitivity to penicillin, vancomycin and quinolon. Transoesophagal echocardiography could exclude valve vegetation. Empiric treatment prior to organism identification was started with moxifloxacin during two weeks. Two days after discontinuation of moxifloxacin fever reoccurred. Blood cultures became positive again for Gemella haemolyans; but now being resistant to moxifloxacin. Treatment was started with vancomycin and subsequently linezolid. Repeat transoesophagal echocardiography confirmed absence of vegetation. Further investigation with PET computed tomography showed a hypermetabolic region at the caecum and colon ascendens. Unfortunately, the patient died the night before planned colonoscopy. The cause of death was never established, since the family of the patient refused autopsy. Gemella

haemolysans is a facultative anaerobic gram-positive diplococcus. Differentiation with Streptococcus viridans is often difficult. It is a normal commensal of the oropharynx, upper respiratory, gastro-intestinal and genitourinary tract. Previous cases described an association between colonic neoplasm and Gemella sepsis.

Conclusion: We conclude that colonic investigation should be considered in patients with Gemella haemolysans sepsis.

M12 Medication reviews initiated by community pharmacists an opportunity to collaborate with the general practitioner

Joke Wuyts, Jan De Lepeleire, Veerle Foulon

Purpose: To describe the drug-related problems (DRPs) detected, interventions proposed and contacts with other healthcare professionals (HCPs) conducted by Belgian community pharmacists during a medication review.

Methods: In the SIMENON study, 56 community pharmacists (CPs) conducted intermediate medication reviews for aged (70 years) polymedicated ambulatory patients. The intervention aimed to improve medication use by reviewing medication dispensing data and conducting a structured patient interview. General practitioner (GP) collaboration was recommended but not obligated. GP contact could be initiated to inform the GP of the review, to discuss DRPs or to share the medication overview. Pharmacists registered drug-related problems and pharmaceutical interventions using the PharmDisk tool.

Results: In 453 patients, 1196 problems were detected (median 3 DRPs/pt, range 0-10). For 11.7% of patients, no DRP was detected. The top-3 detected problems were drug-drug interactions (15.2%), inappropriate timing or frequency (13.5%) and adverse effects (11.9%). The top-3 interventions proposed by CPs were transmission of information (25.1%), in-depth patient counselling (15.0%) and therapy stopped (8.2%). Transmission of info included sharing brief information with the patient or the GP or referring the patient to the GP. For 38.2% of patients, the pharmacist contacted other HCPs (primarily GPs), to discuss DRPs. Patient counselling on the proposed interventions was the sole responsibility of the CP. For 52.2% of patients, the CP also communicated interventions to other HCPs (42.2%) and/or carers or family members (15.0%). Six weeks later, 51.5% of interventions were fully implemented.

Conclusion: Belgian community pharmacists detected DRPs and discussed these problems with the patient and other HCP.

M13 Mortality, mobility and place of residence after hip and vertebral fractures: a systematic review,

Nathalie Ilsbroux, Tine Pecceu, Mieke Deschodt, Evelien Gielen

Purpose: This systematic review aimed to describe mortality, regain of pre-fracture independent mobility and change in place of residence at 12 months follow-up in older patients with osteoporotic hip and vertebral fractures.

Methodology: Systematic search by two independent reviewers of PubMed, EMBASE and CINAHL for prospective observational studies published in English from January 2005 to September 2018 and manual search of article references. The articles had to assess mortality, mobility or change in place of residence at 12 months follow-up in patients aged ≥50 years with hip or vertebral fragility fractures.

Results: Twenty-one prospective observational studies reported outcomes on osteoporotic hip and vertebral fractures. One-year mortality after hip fracture ranged between 9.2% and 33%. Forty to 71% of patients who did not use mobility aids pre-fracture, regained unaided mobility at 12 months. The number of immobile patients at 12 months varied from 2% to 19%. Discharge destination after hip fracture treatment varied widely, but at 12 months follow-up more than 53% lived back at their own home. We found no studies reporting on mobility, mortality or residency outcomes following osteoporotic vertebral fractures.

Conclusion: Elderly people with hip fracture are a heterogeneous population with high risk of post-operative mortality and functional decline. Implementation of a comprehensive geriatric assessment (in a multidisciplinary consultation team or orthogeriatric wards) may play an important role in order to optimize medical care, post-operative rehabilitation and discharge process in order to improve outcome after osteoporotic fractures.

M14 Ondergebruik van opiaten in de terminale zorg voor WZC-residenten met pijn/dyspnoe in 6 EU landen,

Marc Tanghe, Nele Van Den Noortgate, Luc Deliens, Tinne Smets

Doel: We bestudeerden de prevalentie en geassocieerde factoren van ondergebruik van opiaten, gedefinieerd als gebrek aan opiaatvoorschrift bij residenten met pijn en/of dyspnoe in de laatste 3 levensdagen in 6 Europese landen.

Methodologie: In een post-mortem survey van alle residenten, gedurende 3 maand overleden in hun WZC werd pijn en dyspnoe bevraagd adhv CAD-EOLD en werd opiaatvoorschrift in de medicatiefiches bekeken. Kenmerken van de resident, het WZC of de palliatieve dienstverlening die met opiaat-ondergebruik kunnen worden geassocieerd, werden berekend met multilevel multivariabele regressie.

Resultaten: Van 901 overleden residenten met pijn/ dyspnoe, had 10.6% dyspnoe, 34.4% pijn, 55.0% had beide symptomen. Ondergebruik van opiaten per land was 19.2% [95 % CI 12.9 – 27.2] in Nederland, 25.2% (18.3 – 33.6) in België, 29.3% (16.9 - 45.8) in Engeland, 33.7% (26.2 – 42.2) in Finland, 64.6% (52.0 – 75.4) in Italië, 79.1% [71.2 – 85.3] in Polen ($P < 0.001$). Ondergebruik van opiaten per symptoom was 57.2% (33.0 – 78.4) voor dyspnoe, 41.2% (95 % CI 21.9 – 63.8) voor pijn, 37.4% (19.4 – 59.6) voor beide symptomen ($P = 0.013$). De kans op opiaat-ondergebruik was lager (OR 0.33; 95% CI 0.20 – 0.54) bij systematisch pijnassessment. Andere residentkenmerken, palliatieve zorgvoorziening of voorafgaande zorgplanning toonden geen significante associaties.

Conclusie: Ondergebruik van opiaten verschilt sterk per land. Systematisch assessment van symptomen als pijn en dyspnoe zijn geassocieerd met een geringere kans op ondergebruik.

M15 Osteosclerosis due to chronic fluorosis.

Anke Vanhauwaert, Henk Joosen, Wim Maurissen, Sven Martens

Purpose: Discuss a very rare case of osteosclerosis

Methods: Case report

Results: We describe the case of a 78-year old male patient who presented with musculoskeletal pain, anemia and skeletal abnormalities. X-ray and computed tomography showed osteosclerosis. Skeletal scintigraphy revealed a picture similar to a metabolic ‘superscan’. Review of the medication list revealed the ingestion of fluoride 50mg/day, thereby suggesting the diagnosis of skeletal fluorosis. Subsequently we saw elevated serum fluoride levels and alkaline phosphatase levels. A bone marrow biopsy confirmed osteosclerosis. Remarkably was the bone densitometry which showed enormously elevated T scores +19 for the lumbar spine and +5 for the hip. Fluorosis is an uncommon metabolic bone disorder in Western countries. It is most frequently associated with high fluoride levels in drinking water or industrial exposure. Endemic skeletal fluorosis is seen in India, Africa and China. In this case oral ingestion of fluoride for many years was the cause. Symptoms are variable and can also be absent. Urinary and serum fluoride levels are elevated. Sometimes alkaline phosphatase is elevated. Radiological findings vary from osteosclerosis, osteopenia of long bones with increased cortex thickness to osteomalacie. Skeletal scintigraphy shows a metabolic ‘superscan’ caused by increased bone turnover.

Conclusion: This case-report shows a very rare cause of osteosclerosis and very high bone density due to chronic fluorosis.

M16 Paracetamol in older people towards evidence-based dosing?

Paola Mian, Karel Allegaert, Isabel Spriet, Mirco Petrovic

Doel: Paracetamol is the most commonly used analgesic in older people, and is mainly dosed according to empirical dosing guidelines. However, pharmacokinetics (PK) and thereby effects of paracetamol can be influenced by physiological changes

occurring with aging. To investigate the steps needed to reach more evidence-based paracetamol dosing regimens in older people, we applied the concepts used in the paediatric study decision tree.

Methodologie: A search was performed to retrieve studies in older people (>60 years) on paracetamol PK and safety or studies that performed (sub) analysis of PK and/or safety.

Resultaten: Of 6088 articles identified, 259 were retained after title and abstract screening. Further abstract and full text screening identified 27 studies, of which 20 described PK and 7 safety. These studies revealed no changes in absorption with ageing. A decreased (3.922.9%) volume of distribution (Vd) in robust older subjects and a further decreased Vd (20.3%) in frail older compared to younger subjects was apparent. Like Vd, age and frailty decrease paracetamol clearance (2945.7% and 37.5%) compared to younger subjects. Due to limited and heterogeneous evidence it was difficult to draw firm and meaningful conclusions on changed risk paracetamol safety in older people.

Conclusie: This review is a first step towards bridging knowledge gaps to move to evidence-based paracetamol dosing in older subjects. Remaining knowledge gaps are safety when using therapeutic dosages, PK changes in frail older people, and to what extent changes in paracetamol PK should lead to a change in dosage in frail and robust older people.

M17 Population pharmacokinetic modelling of intravenous paracetamol in fit older people displays extensive unexplained variability

Paola Mian, Mirko Petrovic, B.C.P. Koch, Karel Allegaert

Purpose: Paracetamol is the analgesic most used by older people. The physiological changes occurring with ageing influence the pharmacokinetics (PK) of paracetamol and its variability. We performed a population PK-analysis to describe the PK of intravenous (IV) paracetamol in fit older people. Simulations were performed to illustrate target attainment and variability of paracetamol exposure following current dosing regimens (1000 mg q6h, q8h) using steady-state concentration (Css-mean) of 10 mg/L as target for effective analgesia.

Methods: A population PK-analysis, using NONMEM 7.2, was performed based on 601 concentrations of paracetamol from 30 fit older people (median age 77.3 years, range [61.8-88.5], body weight 79 kg [60-107]). All had received an IV paracetamol dose of 1000 mg (over 15 minutes) after elective knee surgery.

Results: A 2-compartment PK-model best described the data. Volume of distribution of paracetamol increased exponentially with body weight. Clearance was not influenced by any covariate. Simulations of the standardized dosing regimens resulted in a Css of 9.2 mg/L and 7.2 mg/L, for q6h and q8h respectively. Variability in paracetamol PK resulted in Css above 5.4 and 4.1 mg/L, respectively, in 90% of the population and above 15.5 and 11.7, respectively, in 10% at these dosing regimens.

Conclusions: the target concentration was achieved in the average patient with 1000 mg q6h, while q8h resulted in underdosing for the majority of the population. Furthermore, due to a large (unexplained) inter-individual variability in paracetamol PK a relevant proportion of the fit older people remained either under- or over exposed.

M18 Prevalentie van frailty bij patiënten met een comprehensive geriatric assessment (CGA) voor transcatheter aortic valve implantation (TAVI) chirurgie

Sofie Van de Velde – Van De Ginste, Stany Perkisas, Maurits Vandewoude, Paul Vermeersch, Anne-Marie De Cock

Purpose: Bij oudere patiënten met een hoog perioperatief risico is TAVI een succesvol alternatief voor risicovolle cardiochirurgie voor de behandeling van aortaklepstenose. Uit studies blijkt dat CGA gecorreleerd is met postoperatieve mortaliteit na 1 jaar. We willen onderzoeken wat de prevalentie van frailty is bij TAVI-patiënten die een CGA krijgen.

Methods: Alle patiënten, verwezen voor TAVI van juli 2015 tot juni 2018, kregen een geriatrische preoperatieve screening. MiniMental-State Examination (MMSE), FRAIL-score, Katz-profiel, handknijpsterkte, TimedUp-And-Go (TUG), Short Physical Performance Battery (SPPB, score 0-4 ernstige beperkingen, score 5-9 hoog risico op beperkingen en score 10-12 laag risico op beperkingen) en Essential Frailty Toolset (EFT, gaande van 0 niet frail tot 5 meest frail) werden afgenomen.

Results: Screening gebeurde bij 123 patiënten, gemiddelde leeftijd 83.1 jaar. De gemiddelde handknijpkracht bedroeg 21.5 kg (17.1 kg voor vrouwen en 27.7 kg voor mannen), gemiddelde TUG 15.5 seconden. Bij SPPB (n=89) had 14.6% ernstige beperkingen, 43.6% hoog risico op beperkingen en 43.8% laag risico op beperkingen. Betreffende EFT score (n=64) had 18.8% score 0, 37.5% score 1, 28.2% score 2, 14.1% score 3, 1.6% score 4 en niemand score 5. Betreffende FRAIL-score 13.8% was niet frail, 50.0% was prefrail en 36.2% was frail. Conclusions De prevalentie van frailty bij TAVI-patiënten is lager dan verwacht. Er bestaat echter onduidelijkheid over het tijdstip van doorverwijzing van patienten voor CGA door cardiologen en cardiochirurgen. De noodzaak van CGA in deze fase van selectie moet verder onderzocht worden. Verder onderzoek naar de correlatie tussen frailty en postoperatieve mortaliteit is eveneens noodzakelijk.

M19 Prognostische tools voor de 1 jaarsmortaliteit bij ouderen met chronische nietoncologische aandoeningen en/of een verhoogde kwetsbaarheid

Camille Vanquaille, Nele Van Den Noortgate, Ruth Piers

Doel: Medische besluitvorming bij ouderen met chronische aandoeningen en/of een verhoogde kwetsbaarheid is complex onder meer gezien het onvoorspelbaar ziekteverloop, zeker bij niet-oncologische aandoeningen. Het doel van deze studie is een overzicht te bieden van prognostische tools die zorgverleners kunnen helpen bij het inschatten van de prognose bij deze patiënten.

Methodologie: Systematische review en kwaliteitsbeoordeling van de geselecteerde publicaties door middel van STROBE statement checklist.

Resultaten: De finale selectie bevat 18 publicaties van goede kwaliteit waarin 42 verschillende tools worden onderzocht. De predictieve accuraatheid van die tools varieert van AUC/C-statistic = 0,51 tot 0,86. De predictieve accuraatheid was matig tot slecht voor 9 tools. Zesentwintig tools hebben een goede predictieve accuraatheid en slechts 11 tools hebben een zeer goede predictieve accuraatheid. Leeftijd, kwetsbaarheid en/of functioneren, NT-proBNP en hemoglobine zijn variabelen die geïncludeerd zijn in de helft of meer van de beste tools.

Conclusie: Tijdens het laatste decennium zijn er heel wat prognostische tools onderzocht. Bepaalde tools hebben een duidelijk hogere predictieve accuraatheid van AUC/C-statistic ≥ 0,8. Doch geen enkele tool heeft een predictieve accuraatheid van 100%, wat betekent dat zorgverleners dienen om te gaan met prognostische onzekerheid op individueel niveau. De bestaande tools kunnen wel een hulpmiddel zijn voor zorgverleners die weinig expertise hebben in het voeren van vroegtijdige zorgplanning.

M20 The Brussels Integrated Activities of Daily Living Tool the measurement of basic, instrumental and advanced daily activities in cognitive disorders

Patricia De Vriendt, Elise Cornelis, Ellen Gorus

Purpose: Functional decline occurs over the course of cognitive decline and cumulative changes accompany the conversion from mild cognitive impairment (MCI) to dementia. The criterion of impairment of activities of daily living (ADL) in the diagnosis of cognitive disorders is important, but not well operationalised.

Methods: Older persons with normal cognitive ageing (HC) (n=47), MCI (n=39) and Alzheimer's disease (AD) (n=44) underwent a diagnostic procedure for neurocognitive disorders. Additionally, the ICF-based Basic (b-), Instrumental (i-) and Advanced (a-) ADL-evaluation (BIA) was administered. Taking each participant as his own reference, based on the number of activities performed and the severity and causes of the functional problem, this tool calculates a global Disability Index (DI) and a Cognitive DI (CDI) expressed as percentages.

Results: b-,i-and a-ADL-DI differed significantly between 3 groups (ANOVA's; all $p<0.05$) with HC showing the least and AD the most disability. A- and i—ADL- CDI differed significantly between the three groups while b-ADL-CDI did not (only between AD versus MCI and HC) (all $p<0.05$). Repeated measures ANOVAs on the CDI's showed a main-effect on diagnosis, type of ADL and an interaction-effect between both (all $p <0.05$).

Conclusions: The degradation of functional abilities occurred in a stepwise hierarchical manner with b-ADLs affected after i– and a-ADLs. The BIA seemed to have a good ability to distinguish normal and pathological cognitive aging probably since evaluating a-ADL combined with b- and i-ADL and the identification between underlying causes of limitations in ADL offers an advantage compared to other ADL-tools.

M21 The development of an oncogeriatric care plan in the Jessa Hospital

Ine Westhovens, Annelies Requilé, Anthony Jeuris

Purpose: To improve care and quality of life in our older cancer population by combining geriatric and oncological know-how. To improve registration of cancer diagnoses in older patients, even in those considered unfit for treatment.

Methods: During reflective meetings with multiple stakeholders from the geriatric and the medical oncology department, the optimal trajectory for older cancer patients was designed, keeping in mind knowledge gained in the SIOG Advanced Course in Geriatric Oncology and the available evidence.

Results: We developed and enrolled an oncogeriatric care plan in our hospital. Initial problems we encountered and first actions are described. All patients ≥70 years old with a positive G8 screening tool or hospitalised on a geriatric ward, with a new diagnose of a solid tumour, disease reoccurrence or disease progression, are eligible for the oncogeriatric co-management program. After receiving a Comprehensive Geriatric Assessment (CGA), patients are discussed on a multidisciplinary tumor board. Personalised prehabilitation interventions and key issues in follow up are devised for each patient. Prevention of hospitalisation for toxicity and functional decline, treatment tolerability and survival in quality adjusted life years will be the primary outcomes in this program.

Conclusions: To improve the care of our older cancer patients, we enrolled an oncogeriatric care plan in our hospital. Currently feasibility and appropriateness of the model is evaluated. When finalised, we want to evaluate the implementation and efficiency of the program. Future plans include creating and recording appropriate oncogeriatric quality indicators and including a larger spectrum of malignancies.

M22 The impact of different types of exercise training on blood BDNF concentrations in older adults: a meta-analysis

Nastasia Marinus, Dominique Hansen, Peter Feys, Raf Meesen

Purpose: Alzheimer's disease is associated with atrophy of the brain volume. Brain-derived neurotrophic factor (BDNF), a neurotrophin highly expressed in the hippocampus, has a protective effect on neuronal survival and maintenance in adulthood. Therefore, it plays an important role in preservation of brain function and size. The goal of this meta-analysis was to analyse the impact of aerobic and/or strength exercise training on BDNF concentrations in older adults (≥60 years).

Methods: This meta-analysis was completed in accordance with the PRISMA protocol. Inclusion criteria were (i) studies with subjects (men and women) ≥ 60 years (ii) participation in a single exercise bout or an exercise program with (iii) measurements of blood BDNF; (iv) a comparison between (a) an intervention group and a control group or (b) two intervention groups, or (c) pre and post measurements of an exercise intervention without a control group. Studies with specific interest in known comorbidities such as diabetes, chronic pulmonary/cardiovascular diseases, musculoskeletal injuries or brain diseases affecting the peripheral and/or central nervous system, except for dementia, were excluded.

Results: Blood BDNF concentrations increased significantly in the exercise versus control group, both after a single exercise bout ($Z=2.21$, $P=0.03$) as well as after an exercise intervention ($Z=4.72$, $P<0.00001$). However, the increase in BDNF was significant only after strength training ($Z=2.94$, $P=0.003$) and combined training ($Z=3.03$, $P=0.002$) but not after aerobic exercise training ($Z=0.82$, $P=0.41$).

Conclusion: To increase blood BDNF concentrations in older adults, strength training and combined aerobic/ strength training are preferred.

M23 The use of opioids in the dying geriatric patient comparison between the acute geriatric ward and the palliative care unit

Wim Janssens, Nele Van Den Noortgate, Ruth Piers

Purpose: Little data concerning the use and dosage of opioids in the terminal phase in elderly, one of the cornerstones to achieve better symptom control in the dying patient, are available. The aim of this study is to describe the use of opioids in the terminal phase in older hospitalized patients, by comparing use and dosage of opioids in the terminal phase in elderly between the palliative care unit (PCU) and the acute geriatric unit (AGU).

Methods: In this multi-centric retrospective study, we included patients 75 years and older who died on the AGU and the PCU in 3 hospitals (during a 2-years period). Sudden deaths were excluded. Demographic and clinical variables, and data concerning use and dosage of opioids in the last 72 hours before death were collected.

Results: Data from 556 patients were collected (38.5% from PCU, 61.5% from AGU). After adjusting for the variables age, gender and underlying pathology, opioids seemed to be given more frequently (98.2% of patients on PCU received opioids, compared to 75.5% of patients on the AGU; OR 1.2; 95% CI 1.1-1.3; $P < 0.001$) and in a higher dosage on the PCU compared to the AGU (mean 88.2mg in 72 hours on PCU versus 27.7mg on AGU; B 34.2; 95% CI 15.0-53.4; $P = 0.001$).

Conclusion: Opioids are more often and in a higher dosage used in older patients dying on the PCU compared to the AGU. Collaboration between PCU and AGU could enhance the quality of the prescription of opioids in geriatric patients,

M24 Unusual “paraneoplastic” hypercalcemia in a geriatric patient

Siddharta Lieten, Aziz Debain, Bert Bravenboer, Tony Mets

Background: While moderate hypercalcemia is a common finding in geriatric patients, extreme values remain rare, presenting a medical emergency that can be difficult to treat and needs a careful analysis.

Case report: A 78-year-old woman was referred with persistent common symptoms (falling, fatigue, anorexia, weight loss, dyspnea), and recent edema of the right leg. A biopsy of enlarged, right-sided inguinal lymph nodes revealed a diffuse large B-cell non-Hodgkin lymphoma, which had extended to the retroperitoneal and mediastinal regions, and to the neck (Lugano classification grade 4). The calcemia was 15mg/dL (3.75 mMol/L), with serum levels that were normal for creatinine, 25(OH)-Vitamin D, PTH, PTHrP; low for Ostase; and increased for 1,25(OH)2-Vitamin D (190 pMol/L; normal values 43168). Although the hypercalcemia disappeared after rehydration and repeated IV administration of Pamidronate, the general condition regressed and the patient deceased before systemic chemotherapy could be started.

Discussion: Hypercalcemia due to primary hyperparathyroidism and bone metastases (together causing 90% of the cases), and tumour-secreted PTHrP could be excluded in this patient. The most likely cause was 1,25(OH) 2 Vitamin D activation by expression of 1α-hydroxylase in lymphoma cells.

M25 Validation Of SARC-F by Proxy (SARC-F-Proxy) For The Screening Of Sarcopenia In Elderly Patients With Dementia A Cross-Sectional Study

Zaid Kasim, Stany Perkisas, Anne-Marie De Cock, Maurits Vandewoude

Purpose: The SARC-F is a validated questionnaire for screening for sarcopenia in older patients. However, it is challenging when using this questionnaire in patients with dementia. Medical caregivers or family can fill in (by proxy) the SARC-F questionnaire for these patients. The aim of this study was to validate the SARC-F-Proxy as a surrogate for the SARC-F in older patients with dementia.

Methods: This study included patients aged 60 years or older with various grades and types of dementia, who were admitted to the ZNA Joostens Psycho Geriatric Hospital. SARC-F-Proxy was completed by medical caregivers and family members. Sarcopenia was defined using the EWGSOP’s diagnostic criteria. Calf circumference, hand grip strength and gait speed were measured and used as variables for muscle mass, strength and function respectively.

Results: This study included 174 patients, 59.2% female. Mean age of 83.3 yr (SD 7.1). Sarcopenia was identified in 110 patients with muscle measurements while SARC-F-Proxy identified 77 patients as possibly sarcopenic. SARC-F-Proxy had 70% sensitivity and 15% specificity with a positive predictive value of 59% and negative predictive value of 23%.

Conclusion: SARC-F-Proxy is useful as a surrogate screening tool for sarcopenia among patients with dementia.

M26 Validation Of SARC-F For The Screening Of Sarcopenia In Elderly Patients With Dementia A Cross-Sectional Study

Zaid Kasim, Stany Perkisas, Anne-Marie De Cock, Maurits Vandewoude

Purpose: Screening for sarcopenia is essential in a geriatric population including patients with dementia. The SARC-F is a validated questionnaire for the screening of sarcopenia in elderly patients. However, using this questionnaire in patients with cognitive problems might be a problem. The objective of this study was to determine whether the SARC-F questionnaire is useful in screening for sarcopenia in patients with dementia.

Methods: This study included patients aged 60 years or older with various grades and types of dementia, who were admitted to the ZNA Joostens Psycho Geriatric Hospital. The SARC-F questionnaire was completed by the patients themselves. Sarcopenia was defined using the EWGSOP's diagnostic criteria. Calf circumference, hand grip strength and gait speed were measured and used as the variables for muscle mass, strength and function respectively.

Results: This study included 174 patients, 59.2% female. Mean age of 83.3 yr (SD 7.1). Sarcopenia was identified in 110 patients, while SARC-F identified only 38 patients as possibly sarcopenic. In this sample SARC-F had 58% sensitivity and 33% specificity with a positive predictive value of 66% and a negative predictive value of 27%.

Conclusion: SARC-F could not be used as a satisfactory screening tool for sarcopenia among patients with dementia who score the questionnaire themselves.

M27 Validation of the Dutch EAT-10 screening tool for oropharyngeal dysphagia in the elderly

Chun Yuen Johnny Chung, Anne-Marie De Cock, Stany Perkisas, Maurits Vandewoude

Purpose: Validation of the Dutch EAT-10 screening tool for oropharyngeal dysphagia in the elderly

Method: Patients ≥65 years admitted to the Geriatric ward of the ZNA hospitals are eligible for inclusion in this study. The exclusion criteria consist of head and neck tumours, acute cerebrovascular accident <3 months, psychiatric diseases and inability to complete the EAT-10 screening tool. Validation of the English EAT-10 screening tool in the Dutch language is based on the protocol of Guillemin et al. for cross-cultural adaptation of translation. The final Dutch version is then implemented in the form of a pilot study to probe for any uncertainties and comprehension issues. Furthermore, the internal consistency and test-retest reliability is examined.

Results: Preliminary data showed a good comprehension of the Dutch EAT-10 screening tool among the Dutch speaking elderly population (n=41). Analysis using the Cronbach's alpha (n=41) showed an excellent consistency of 0.934. Question 1, 3 and 5 might have a limited redundant tendency, though larger sample sizes are needed. The test-retest reliability using Spearman's rho (n=27) showed a strong correlation of 0.848 (p=0.000). Though, when applied to each question separately, the correlation varied from 0.613 to 0.996 (p≤0.001). The time needed to finish the questionnaire was 201s (+/-112s).

Conclusion: The Dutch EAT-10 was found to be an easy and practical screening tool among the elderly taking only a few minutes of time. It showed an excellent internal consistency and a strong test-retest reliability. Further studies with larger study population are needed to consolidate the findings.

Psycho-Sociale abstracts

PS1 Burenhulp voor thuiswonende kwetsbare ouderen

Joost van Vliet

Doel: Doel van dit onderzoek is om zicht te krijgen op bevorderende en belemmerende factoren om te komen tot burenhulp

ten behoeve van thuiswonende ouderen. Het gaat hierbij om vormen van lichte gemeenschappelijkheid door buren, samengebracht in de term buren-hulp. Deze burenhulp kan op haar beurt ondersteunend zijn voor de zwaardere zorg die eerder door familieleden, vrienden en het professioneel systeem gerealiseerd wordt.

Methodologie: In een kwalitatief panel (n=500) onder 65+ is gevraagd naar aspecten van burenhulp, verwachtingen en werkelijke hulp. Aanvullend zijn diepte-interviews gehouden bij thuiswonende kwetsbare ouderen om meer zicht te krijgen op burenhulp.

Resultaten: De resultaten dragen bij aan het beter begrijpen hoe kwetsbare ouderen zich thuis weten te redden met steun van het sociaal netwerk en formele hulp- en dienstverlening. Er ontstaat groeiend inzicht over hoe buren bijdragen aan het behouden van het precair evenwicht in de zorgtriade zorgvrager, mantelzorg en zorgprofessional. Burenhulp roept uitgesproken reacties op; er zijn mensen die er niets van moeten weten en anderen zien dat als de normaalste zaak van de wereld. Een belangrijke waarde is het 'oogje in het zeil houden' en 'onmiddelijke beschikbaarheid bij calamiteiten'. Zo vervullen buren een belangrijke bijdrage bij het in stand houden van de zelfredzaamheid van mensen met dementie.

Conclusie: Er zijn meer mensen bereid om burenhulp te geven dan dat er burenhulp geleverd wordt. Aanvullend onderzoek is nodig om meer zicht te krijgen op factoren die van invloed zijn op het verstrekken en ontvangen van burenhulp.

PS2 De Brielbrug: sociale integratie, vaardigheden en zelfwaarde bevorderen van cliënten dagbehandeling Psychiatrie door het faciliteren van ontmoetingen

Bram Claeys, Ginette De Meyer, Matthijs Missinne, Maarten Casier

Doel: Als Interne Liaison Geriatrie stellen we ons tot doel om de geriatrische benadering te verspreiden binnen het ziekenhuis door o.a. vorming, bijscholing en in het bijzonder het coachen van het verpleegkundig en paramedisch personeel. Het doel van de Granny Awards bestaat erin de niet-geriatrische afdelingen te gaan ondersteunen en coachen bij de implementatie van de geriatrische benadering op hun afdeling aan de hand van projecten.
Methodologie: Begin 2018 werd door het zorgprogramma in samenwerking met de dienst communicatie een projectoproep gelanceerd naar zowel het zorg- als het niet zorgdepartement e.g. infrastructuur. Inclusiecriterium voor de projecten was tegemoet komen aan de noden en zorg voor de oudere zorgvrager. Indienen van projecten kon tot eind mei. Van juni tot november werd ondersteuning en coaching voorzien om de projecten uit te rollen

Resultaten: Eind mei werden 8 projecten weerhouden die zich focussen op de geriatrische zorgverlening binnen hun dienst. Alle 8 projecten hebben betrekking op de onmiddellijk patiëntenzorg en werken op thema's die de geriatrische patiënt holistisch en integraal benaderen zoals psychosociaal welzijn, fysiek welzijn, de patiënt in relatie tot anderen en patiëntenparticipatie binnen het revalidatieproces. Alle projecten maakten kans op de allereerste Granny Award uitgereikt eind november op het slotevent tijdens de week van oudere zorgvrager.

Conclusie: Het vergt dagdagelijkse aandacht om de geriatrische zorgverlening onder de aandacht te brengen en te behouden. Door middel van deze projecten werd een aanzet gegeven om deze in de huidige patiëntenzorg te integreren. Op heden zijn 7 van de 8 weerhouden projecten effectief geïntegreerd in het beleid van deze zorgafdelingen.

PS3 De mening en attitude van Vlaamse artsen tegenover levensbeëindiging bij ouderen met levensmoeheid

Maxime Benoot, Ruth Piers, Nele Van Den Noortgate

Doel: Deze studie tracht een beeld te geven van de attitude van Vlaamse artsen omtrent actief levensbeëindigend handelen bij ouderen met levensmoeheid.

Methodologie: Systematisch en ad random werden Vlaamse LOK-groepen voor huisartsgeneeskunde en geriatrie gecontacteerd. Elke deelnemer ontving een gevalideerde vragenlijst waarin onder andere met vier vignetten gewerkt wordt. Meningen van huisartsen en geriaters werden vergeleken door middel van de Fisher's exact test.

Resultaten: In totaal namen 190 artsen (133 huisartsen en 57 geriaters) deel aan de studie. Hiervan gaven 41% van de

huisartsen en 80% van de geriaters aan maandelijks geconfronteerd te worden met ouderen die levensmoe zijn (p<0,001). Geriaters kregen vaker een verzoek tot euthanasie in het kader van levensmoeheid in vergelijking met huisartsen (67% versus 88%, p=0,002). Wettelijke toelaatbaarheid en invoelbaarheid van de vraag naar euthanasie werden groter ingeschat bij de vignetten waarbij de ernst van de polypathologie (CIRS-G) groter is; dit in dezelfde mate bij huisartsen als geriaters. In elk van de 4 vignetten bleken huisartsen vaker bereid (p<0,001) om het verzoek tot euthanasie persoonlijk uit te voeren.

Conclusie: Levensmoeheid wordt frequent gezien door de deelnemende artsen. Huisartsen en geriaters verschillen niet in opinie rond invoelbaarheid en wettelijke toelaatbaarheid, doch huisartsen vertonen wel een meer positieve attitude tegenover het zelf uitvoeren van de euthanasie indien het wettelijk toelaatbaar zou zijn.

PS4 De ontwikkeling van een sociaal supplement voor de BelRAI instrumenten om de sociale context van zorgvragers in de thuiszorg te evalueren

Shauni Van Doren, Kirsten Hermans, Anja Declercq

Doel: In 2018 bevestigden de federale en de Vlaamse overheid hun engagement om BelRAI nationaal te implementeren. De BelRAI instrumenten brengen verschillende zorgnoden, symptomen en voorkeuren van kwetsbare personen in kaart. De resultaten worden gebruikt om zorgplannen op te stellen. De BelRAI instrumenten focussen voornamelijk op intrapersoonlijke factoren (vb. gezondheidstoestand; stemming). In de thuiszorg hebben interpersoonlijke factoren -de sociale context- eveneens een impact op de zorgnood en het zorggebruik. Deze studie heeft als doel een sociaal supplement te ontwikkelen voor de BelRAI instrumenten om een antwoord te bieden op de complexe zorg- en ondersteuningsvragen in de Vlaamse thuiszorg.

Methodologie: Aan de hand van een literatuurstudie, negen focusgroepen, en een aantal expertenpanels met actoren uit de Vlaamse thuiszorg (zorgverleners en zorgvragers) zochten we naar de verschillende sociale omgevingsfactoren die mogelijk een invloed hebben op de zorgnood/zorgvraag. Deze factoren vormden de leidraad voor de ontwikkeling van de eerste versie van het sociaal supplement. Deze zal in 2019 getest worden bij een 1000-tal mensen in de thuiszorg in Vlaanderen.

Resultaten: Uit onze bevindingen blijkt dat kennis over de sociale context onmisbaar is bij het opstellen van een doeltreffend zorgplan. De testversie van het sociaal supplement bestaat uit vier modules Beoordeling van de leefomgeving, Maatschappelijke participatie, Psychosociaal welzijn, en Informele zorg en steun.

Conclusie: De sociale context is een complex gegeven en niet eenvoudig af te bakenen. Deze studie zal resulteren in een gevalideerd sociaal supplement voor de BelRAI instrumenten in de thuiszorg in Vlaanderen.

PS5 Het woonzorgcentrum, een derde thuis? De wensen en behoeften van ouderen met een migratieachtergrond

Jolien Allart, Ellen Gorus

Doel: Ouderen met een migratieachtergrond zullen in de toekomst meer gebruik maken van de residentiële zorg daar de wederkerigheid van zorg in gedrang komt. In tegenstelling tot de toegankelijkheid van de zorg, wordt het welbevinden van ouderen die reeds gebruik van maken de gezondheidszorg veel minder bestudeerd. Dit onderzoek tracht meer kennis en inzichten te verwerven omtrent de wensen en behoeften van ouderen met een migratieachtergrond, die verblijven in een woonzorgcentrum.

Methodologie: Het onderzoek is kwalitatief en exploratief, gebaseerd op grounded theory. Semigestructureerde focusgroepen werden georganiseerd bij beleidsmedewerkers (n=6), personeelsleden met een migratieachtergrond (n=8) en thuiswonende ouderen met een migratieachtergrond (n=4),gerekruteerd aan de hand van snowball – en convenience samplingmethoden. De data werd inductief geanalyseerd volgens de methode van constante vergelijking

Resultaten: In alle focusgroepen kwamen volgende behoeften aan bod een menswaardig bestaan, verbondenheid met medemens en maatschappij, familiaal aspect, onafhankelijkheid en cultuurbeleving. In de focusgroepen kwamen bijkomende aspecten en wensen aan bod coping, communicatie, infrastructuur en omgeving, spanningsveld/taboe en uitdagingen voor

het beleid.

Conclusie: De huidige residentiële voorzieningen zullen nooit een thuisgevoel kunnen evenaren voor ouderen met een migratieachtergrond aangezien deze sterk in contrast zijn met de opvattingen in de eigen cultuur. Doch moet er aandacht zijn voor zij die wel verblijven in het woonzorgcentrum. Het is belangrijk om de gemeenschap te betrekken, wederzijdse verwachtingen af te stemmen en rekening te houden met de heterogeniteit tussen origines, families en individuen.

PS6 Predicting conversion to dementia in Mild Cognitive Impairment (MCI) the role of neuropsychiatric symptoms

Samantha Dequanter, Patricia De Vriendt, Ellen Gorus

Purpose: Mild Cognitive Impairment (MCI) is associated with progression to dementia. In addition to alterations of the cognitive and functional status, neuropsychiatric symptoms (NPS) can be early manifestations of this conversion process. However, consensus about the predictive values of these NPS is non-existent. This study contributed to the determination of these values in the conversion process from MCI to dementia.

Methods: This was a retrospective longitudinal (three years) dossier study of patients who had received an MCI-diagnosis in the Geriatric Day Hospital of the UZ Brussel between August 2006 and December 2013 (n=235). Analyzed data comprised patient characteristics, test scores of the Mini Mental State Examination, Cambridge Disorders or the Elderly Examination (Camcog), Memory Impairment Screen, Visual Association Test, Short Depression Scale, Geriatric Depression Scale and NPS-screen as recorded with the Neuropsychiatric Inventory Questionnaire (NPI-Q).

Results: After three years, 22.1% of the subjects, on average after 1.1 years, converted to dementia of which 63.5% to Alzheimer's Dementia. Seventeen percent had remained stable. NPS were highly prevalent (82.6% of total sample). Converters had more severe and more burdensome signs of irritability at baseline than non-converters. Age (HR=1.12) and Camcog test performance (HR=0.90) were strong predictors of conversion. Sleep wake disorders (HR=2.80) and apathy (HR=1.87) were even more predictive. Furthermore, total NPI-Q-severity score contained predictive value (HR=1.08).

Conclusions: Progression to MCI can be predicted by symptoms of apathy and sleep wake disorders. Identification of these NPS in clinical practice might contribute in identifying the highest risk profiles. More longitudinal research is needed to confirm these findings.

PS7 Promoting informed and shared decisions about e-Health solutions for seniors with cognitive impairments and their informal caregivers (PROMISE)

Samantha Dequanter, Marie-Pierre Gagnon, Ellen Gorus, Ronald Buyl

Purpose: The number of seniors with cognitive impairments (SwCI) such as mild cognitive impairment or dementia is expected to grow tremendously worldwide. The development of technologies dedicated to health and wellbeing (eHealth) offers potential to support these seniors and their informal caregivers (IC) but is not always adapted to their needs and preferences. This project supports these groups making informed choices about technologies to improve their health and wellbeing and to facilitate aging-in-place.

Methods: The target groups will be involved in the following overlapping research phases (1)Qualitative study including interviews and focus groups to identify perceptions and needs towards eHealth solutions (eHS) and motivators and barriers experienced towards adoption of eHS;(2)Systematic review and environmental scan of eHS that have been successfully implemented in Europe and Canada over the last five years. Reliable evidence concerning the benefits and risks associated with these technologies will be summarized;(3)Development of an electronic decision support tool that considers the perspectives of the target groups in decision-making about using these eHS.

Results: After the project launch (March 2018) several team meetings were held through real life meeting and video conferencing. The qualitative study, as well as the systematic review and environmental scan is ongoing and preliminary findings will be presented.

Conclusions: The expected results of this project are likely to lead to more acceptable decisions. Furthermore, the developed tool will promote informed and shared decisions for eHS targeting SwCI and IC. By considering specific end-user preferences this project will facilitate needs-based supply of the eHS, ultimately improving health and wellbeing.

Varia abstracts

V1 Evaluating the implementation of G-COACH, a geriatrics co-management program for cardiology patients in the hospital, using the PDCA cycle

Bastiaan Van Grootven, Anthony Jeuris, Koen Milisen, Johan Flamaing, Mieke Deschodt, G-COACH Consortium

Purpose: To evaluate the implementation of a geriatrics co-management program for older cardiac care patients.

Methods: In 2017, a geriatrics co-management program (G-COACH) was gradually implemented on two cardiac care units using four iterations of the PDCA-cycle. First, a context analysis was performed to observe the standard of care and factors that could facilitate or hinder implementation. Second, a context-specific implementation strategy was developed. Third, the program was gradually implemented and evaluated using quality indicators and focus group interviews. Fourth, the program was adjusted based on a consensus decision with stakeholders. This PDCA-cycle was repeated twice to achieve optimal performance until all stakeholders considered the program both feasible and acceptable. A fourth PDCA-cycle evaluated the long-term sustainability of the program using a reduced set of quality indicators and stakeholder interviews.

Results: Three times 30 patients were recruited for the initial evaluation and adaptation of the program and 227 patients were recruited to evaluate its sustainability. The reach of the program was good. The program demonstrated good detection of geriatric risks and early initiation of rehabilitation, discharge planning and nutritional and occupational therapy. Adjustments to the program were needed, e.g. daily follow-up on the cardiac care unit by the geriatrics team was needed to coach the cardiac care team, instil a geriatric care environment, coordinate the implementation of geriatric protocols and to detect acute geriatric complications, which were otherwise underdetected.

Conclusions: Iterative evaluations and adaptations with stakeholder involvement improved the performance and sustainability of the co-management program.

V2 Granny Awards een ziekenhuisbrede projectoproep om de geriatrische benadering naar de praktijk te vertalen binnen AZ Sint-Lucas Gent

Bram Claeys, Maarten Casier, Iny Cleeren, Femke Vlaeminck-De Meyer

Doel: Als Interne Liaison Geriatrie stellen we ons tot doel om de geriatrische benadering te verspreiden binnen het ziekenhuis door o.a. vorming, bijscholing en in het bijzonder het coachen van het verpleegkundig en paramedisch personeel. Het doel van de Granny Awards bestaat erin de niet-geriatrische afdelingen te gaan ondersteunen en coachen bij de implementatie van de geriatrische benadering op hun afdeling aan de hand van projecten.

Methodologie: Begin 2018 werd door het zorgprogramma in samenwerking met de dienst communicatie een projectoproep gelanceerd naar zowel het zorg- als het niet zorgdepartement e.g. infrastructuur. Inclusiecriterium voor de projecten was tegemoet komen aan de noden en zorg voor de oudere zorgvrager. Indienen van projecten kon tot eind mei. Van juni tot november werd ondersteuning en coaching voorzien om de projecten uit te rollen

Resultaten: Eind mei werden 8 projecten weerhouden die zich focussen op de geriatrische zorgverlening binnen hun dienst. Alle 8 projecten hebben betrekking op de onmiddellijk patiëntenzorg en werken op thema's die de geriatrische patiënt holistisch en integraal benaderen zoals psychosociaal welzijn, fysiek welzijn, de patient in relatie tot anderen en patiëntenparticipatie binnen het revalidatieproces. Alle projecten maakten kans op de allereerste Granny Award uitgereikt eind november op het slotevent tijdens de week van oudere zorgvrager.

Conclusie; Het vergt dagdagelijkse aandacht om de geriatrische zorgverlening onder de aandacht te brengen en te behouden. Door middel van deze projecten werd een aanzet gegeven om deze in de huidige patiëntenzorg te integreren. Op heden zijn 7 van de 8 weerhouden projecten effectief geïntegreerd in het beleid van deze zorgafdelingen.

V3 Muscle fatigability, self-perceived tiredness and physical functioning as early markers for frailty

Veerle Knoop, Nick Demunter, Sofie Vermeiren, Ivan Bautmans

Purpose: Little is known on the dynamics of frailty. Physical frailty can adopt three stages robust, pre-frail and frail. The aim of this project was to investigate which physical frailty features can be used in early identification of frailty.

Methods: Two-hundred-ninety-two participants of the BUTTERFLY-study, a cohort study in well-functioning subjects aged 80+, were identified as robust, pre-frail and frail by the Frailty Index of Fried (FFI), the Rockwood Frailty Index (RFI) and the Groningen Frailty indicator (GFI), and were assessed for grip strength, fatigue and functional parameters.

Results: Low grip work and grip strength were significant ($p < 0.01$) related to more self-perceived fatigue and were predictors of frailty in community dwelling older adults. Grip work corrected for body weight (Wald CHi2 = 54.38), sex (Wald Chi2 = 50.38) and fatigue resistance (Wald Chi2 = 49.31) showed the highest predictive value for the frailty status.

Conclusions: Robust older adults were less fatigued and had more strength than their counterparts. Muscle fatigability could be an additional feature to screen for early frailty given the fact that this parameter integrates muscle strength and fatigue, the two most predictive features for physical frailty.

V4 Ontwikkeling en implementatie van een set kwaliteitsindicatoren voor het in kaart brengen van de zorg op een afdeling geriatrie binnen het Jessa ZH

Anke Schuermans, Charlotte De Clercq, Maarten Plessers, Anthony Jeuris

Doel: Ontwikkelen en implementeren van een set kwaliteitsindicatoren om bij elke geriatrische patiënt te registreren om zo zorgprocessen te verbeteren en de kwaliteit van zorg te bewaken.

Methodologie: Het Jessa ziekenhuis telt 155 G-bedden, verspreid over zes afdelingen. Aan de hand van een scoping review naar evidence-based kwaliteitsindicatoren voor geriatrische ziekenhuiszorg en op basis van lokale experten feedback werd een eerste set ontwikkeld waarbij de nadruk lag op het evenwicht tussen wetenschappelijke relevantie en klinische bruikbaarheid. De ontwikkelde indicatorenset werd geoperationaliseerd in de interne 2018 werden er 223 registraties (47,65%) gemaakt in MIR. Door een wekelijks rapport met een ratio tussen aantal ontslagen en MIR-registraties – naar alle gebruikers verstuurd door het medisch diensthoofd – steeg de registratie tot 44,22% (n=148) in week 40-44 en tot 56,30% (n=65) in week 45-46. registratiesoftware Medische Indicatoren Registratie (MIR), voorgesteld aan de geriaters en in een pilootfase getest waarbij facilitatoren werden gebruikt om de registratie te verhogen.

Resultaten: Aan de hand van International Consortium for Health Outcome Measurement (ICHOM), werden er zes outcome-, drie procesindicatoren en één Patient Reported Experience Measures (PREM) ontwikkeld. Na een pilootfase (twee maanden) werd de indicatorenset gereduceerd tot negen en gereviseerd. Tussen 1 oktober 2018 en 18 november

Conclusie: Een indicatorenset die wetenschap en klinische relevantie verzoent, werd ontwikkeld en geïmplementeerd voor geriatrie afdelingen binnen het Jessa ziekenhuis. Registraties zullen in de toekomst gevisualiseerd worden in een dashboard om dagelijkse opvolging van de indicatoren en de kwaliteit van zorg te vergemakkelijken.

V5 Randomized controlled trial to evaluate a prevention program for frail community-dwelling older adults

Michaël Van der Elst, Birgitte Schoenmakers, Jan De Lepeleire

Purpose: Frail community-dwelling older adults are at risk for adverse outcomes such as disability, institutionalization and mortality. The aim of the D-SCOPE project is to detect frail community-dwelling older adults who previously went unnoticed, to improve their access to care and support, and to increase their meaning in life, life satisfaction, mastery.

Methods: The study is a prospective, longitudinal randomized four-armed controlled trial (6 months). Respondents had to be community-dwelling older adults aged 60 years and living in Ghent, Thienen or Knokke-Heist. At baseline, participants who were mild frail on one of the 5 domains of frailty (CFAI-plus) or felt frail based on the subjective assessment of frailty were randomly assigned to (1) the intervention group or (2) the control group. The intervention group received a home visit of a social worker and a monthly follow-up by phone. A mixed method design with the inclusion of quantitative and qualitative data analyses was used to evaluate the efficacy and experiences of the prevention program on frailty.

Results: In total, N=869 respondents participated at baseline (intervention group N=271, control group N=269). The intervention had a statistical significant effect on meaning of life, however all other quantitative outcomes weren't significant. The qualitative results suggested that the home visit changed the perception of the social house (OCMW), lowered the thresholds to ask help from family or the OCMW.

Conclusion: Home visits in community-dwelling older adults have an effect, although quantitative methods may be too limited show the real effect of complex interventions.

V6 The Feasibility to Determine Relevant Contextual Factors in a RCT a Stepwise Approach with Online Information

Michaël Van der Elst, Birgitte Schoenmakers, Jan De Lepeleire

Purpose: RCTs are widely regarded as the gold standard for identifying causal relations. Although RCTs of complex public health interventions fail to give sufficient consideration to how intervention components interact with each other and with local context. The aim of the present study is to have a better idea of the feasibility to determine relevant contextual factors in a RCT.

Methods: Five steps were undertaken to determine these contextual factors 1) a broad demarcation of relevant topics, 2) a search to find appropriate public data-sets with standardized information, 3) to make an inventory, 4) reducing the inventory by making a rigorous selection by independent experienced researchers, 5) to do a nominal grouping technique.

Results: In total 157 variables were retrieved from 3 public web-based datasets. The contextual factors covered a broad range of information about the municipalities including sociodemographic, socioeconomic, administrative power local government, care supply/availability. Finally, 10 variables were chosen as the most relevant contextual factors.

Conclusion: The present study shows that it is feasible to determine relevant contextual factors that might affect the results of an intervention and gives a stepwise approach how to do it. A large amount of standardized public information/data is available online. A nominal grouping technique is an easy to apply to select those contextual factors that should be taken into account when evaluating an intervention, based on the experiences of experts. Future complex intervention studies should considerate the importance of the local context when examining the effect of an intervention.

V7 The operationalization of fatigue in frailty scales

Veerle Knoop, Axelle Costenoble, Sofie Vermeiren, Ivan Bautmans

Purpose: Fatigue is a central component in most frailty concepts. In contrast to other frailty characteristics fatigue seems to be non-responsive to treatments designed to combat frailty. This study explored the different constructs of fatigue that were used in the existing frailty scales and their role in the assessment of frailty Methods A systematic review on frailty instruments was carried out until September 2018 in PubMed, Web of Knowledge, and PsycINFO, the literature search yielding 5838 hits. Hundred-thirty-three articles were included, describing 160 frailty scales. Results In total 58% (n=91) frailty scales included fatigue items that were embedded in five different constructs of fatigue. A great diversity of fatigue items (n=139) were assessed in the frailty scales, representing 14% of all items in these frailty scales. Single domain frailty scales contained more fatigue items ($p=0.01$) that represented more weight ($p<0.01$) of all items compared to multi domain frailty scales.

Conclusion: Fatigue seems to be dependent on inclusion of a physical construct, however the way how fatigue is assessed leans more to psychological manifestations. The heterogeneous array of fatigue assessment leads towards ambiguity

regarding the operationalization. Fatigue could be an additional important feature to screen for early frailty given the fact that this parameter has a prominent role in frailty scales. These results can be used by clinicians or researchers as a guideline for the choice of a suitable frailty scale depending on the type of fatigue of interest.

Nursing abstracts

N1 Development and Validation of the Short Version of the Delirium Observation Screening Scale (s-DOSS)

Elke Detroyer, Andrew Teodorczuk, Bruynseraede Ellen, Anke Ceusters, Marieke Schuurmans, Geert Verbeke, Koen Milisen

Purpose: To develop and validate a shortened version of the original 13-item Delirium Observation Screening Scale the s-DOSS.

Methods: The s-DOSS was developed in two steps. First, an expert survey including an international panel of 14 delirium experts was performed to evaluate the content validity of the original 13-item DOSS. Second, a data-analysis of 16110 patients (>= 18 years) being admitted to a university hospital and evaluated by the DOSS, was conducted. Decisions about removing items were based on the content validity index (step 1), and on correlation (i.e. inter-item, item-total) and reliability analysis (step 2). For the validation of the s-DOSS, a secondary data-analysis comprising data from a prospective study of 48 palliative care patients, was conducted. A total of 113 DOSS observations were compared with the Confusion Assessment Method (gold standard). Sensitivity, specificity and a receiver operating characteristic (ROC) curve were calculated for the s-DOSS.

Results: Items 3 (attention to conversation), 9 (remembers events), 11 (pulls tubes) and 12 (sudden emotional) were not or less relevant (I-CVI 0.36-0.64) according to the experts. Correlation analysis revealed that those items explained the lowest variance (R^2=13.5%, 22.9%, 34.1% and 21%, respectively). The shortened 9-item s-DOSS had a Cronbach's Alpha of 0.853 and an area under the ROC-curve of 0.935. The optimal cutoff point was 2 (sensitivity=90.9%, specificity=92.2%).

Conclusions: The 9-item s-DOSS shows good diagnostic accuracy in a palliative care unit population. Further prospective research should validate the s-DOSS in other populations (e.g. hip fracture patients).

N2 Identifying vulnerable older adults in cardiac care wards time to shift the paradigm

Anthony Jeuris, Bastiaan Van Grootven, Johan Flamaing, Mieke Deschodt

Purpose: To determine if screening with the Geriatric Risk Profile (GRP) is still a valid approach to determine who is at risk for inhospital functional decline and/or would benefit from a consultation by a geriatric liaison team

Methods: We performed a secondary data-analysis of the prospective observational cohort of the G-COACH study, describing patient profiles and routine care processes in 187 older adults in two cardiac care units in the University Hospitals Leuven between September 2016 and June 2017. Inhospital functional decline was defined as a decrease on the Katz Index of Activities of Daily Living between admission and discharge.

Results: Nine in ten patients had at least one geriatric syndrome and 63 patients (33%) developed functional decline. Based on the GRP proposed cut-off of ≥ 2, 90% of patients were considered being at risk for functional decline (sensitivity of 92%, negative predictive value of 15% and Area Under the Curve (AUC) of 0.54). Increasing the cut-off score did not improve the AUC. Forty-six 'at risk' patients (28%) received a consultation by a geriatric liaison team after a median of 4 hospitalization days. GRP scores were not significantly related to functional decline (x2 1.93; p = 0.16) or geriatric consultations (x2 1.35, p = 0.25)

Conclusion: The GRP has low discriminative value in identifying older patients at risk for functional decline in a cardiac care unit. The high number of patients with a geriatric syndrome suggests a need for standardized geriatric assessment embedded in routine care.

N3 Ontwikkeling en evaluatie van een multicomponent-programma voor de implementatie van een richtlijn ter ondersteuning van een fixatiearme thuiszorg

Sara Vandervelde, Kristien Scheepmans, Koen Milisen et al.

Doel: Een multicomponent-programma ontwikkelen en evalueren voor de implementatie van een praktijkrichtlijn ter ondersteuning van een fixatiearme thuiszorg. Methodologie Om het multicomponent-programma te ontwikkelen werd er gebruik gemaakt van 'Intervention Mapping' (IM). IM zorgt ervoor dat interventies die gedragsverandering beogen samen met een expertengroep, systematisch en evidence-based ontwikkeld worden. IM bestaat uit zes stappen analyse van het probleem, doelstellingen bepalen, ontwerpen van de interventie, productie van de interventie, ontwikkeling implementatieplan, evaluatie- en effectiviteitsplanning. Het multicomponent-programma werd in Vlaams-Brabant, regio Hageland op kleine schaal getest en aan de hand van een procesevaluatie geëvalueerd.

Resultaten: Het multicomponent-programma heeft drie uitgangspunten verspreiden van de richtlijn, opbouwen van kennis en behoud van de implementatie. Om de richtlijn te verspreiden en toegankelijk te maken werd er een website en sociale media aangemaakt, waar zorgverleners relevante informatie kunnen terugvinden. Door middel van een promotiefilmpje, online tutorial, flyer, samenvatting van de praktijkrichtlijn en een opleiding tot ambassadeur fixatiearme thuiszorg werd er ingezet op de kennis en het bewustzijn van de zorgverleners. Het behoud van de implementatie werd gefaciliteerd door twee intervisies en een procesevaluatie te organiseren voor de ambassadeurs fixatiearme thuiszorg. Meer gedetailleerde resultaten zullen gekend zijn tegen eind januari 2019.

Conclusie: De ontwikkeling van een multicomponent-programma is noodzakelijk om de praktijkrichtlijn te implementeren in de thuiszorg. Verder onderzoek is nodig naar de effectiviteit van het ontwikkelde multicomponent-programma. Het is tevens noodzakelijk om belangrijke stakeholders zoals het beleid en de mantelzorgers bij de ontwikkeling van het multicomponent-programma te betrekken.

N4 Putting patient-centered care into practice. The development and implementation of an interdisciplinary assessment administered on hospital admission

Anthony Jeuris, Anke Schuermans, Annelies De Vuyst

Purpose: To develop and implement an interdisciplinary assessment on admission to coordinate care that is less burdensome and aligned with healthcare outcomes that matter most to older adults.

Methods: The study took place at the Jessa Hospital, a community hospital with 155 geriatric beds. We used a user-centered design framework (ideate à prototype à test à redesign) to develop the assessment between June and September 2018. Implementation on 1 geriatrics ward started October 2018.

Results: Based on existing local assessment form and a scoping review on screening tool for geriatric syndromes we developed a new assessment for patients admitted to the geriatrics department. Redesigning took place after testing it in 10 patients. Comprising four pages – taking about 10 min to administer – the new history taking form assesses some relevant care domains in older adults. At the end of an assessment care goals are agreed upon with patients and their significant others. We added a column with care goals suggestions to guide caregivers. On interdisciplinary team meetings 2x/week interventions to achieve these goals
are discussed, evaluated and communicated with the patient during bedside-shift report. We note an increase in the number of geriatric syndromes detected on hospital admission leading to an earlier start of interventions.

Conclusion: We developed and started implementation of an interdisciplinary assessment that allows us to align care with preferences of older adults resulting in the early start of interventions. Research is needed to quantify its added value

N5 Unplanned Readmission prevention by Geriatric Emergency Network for Transitional care (URGENT): a prospective quasi-experimental study

Pieter Heeren, Els Devriendt, Mieke Deschodt, Marc Sabbe, Koen Milisen, Johan Flamaing

Purpose: URGENT is a comprehensive geriatric assessment (CGA) based nurse-led care model in the emergency department (ED) with post-ED geriatric follow-up. The study aim was evaluating its effectiveness.

Methods: A prospective, sequential before-after study with a control cohort (CC) and an intervention cohort (IC) was conducted in the ED of University Hospitals Leuven. Dutch-speaking, community-dwelling ED patients aged 70 years or older were eligible for enrollment. The interRAI ED Screener© and clinical judgement of ED staff were used to identify patients at risk for unplanned ED readmission. A geriatric nurse conducted CGA in at risk patients. Subsequently, a personalized interdisciplinary care plan was made. Discharged at risk patients were offered case manager follow-up. Hospitalized at risk patients received follow-up on a geriatric ward or by the inpatient geriatric consultation team if necessary. The primary outcome was 90-day unplanned ED readmission rate. Secondary outcomes were hospitalization rate, ED length of stay (LOS), in-hospital LOS, 90-day higher level of care, 90-day functional decline and 90day mortality.

Results: On average, an at risk patient (n=404) received seven advices. Adherence rate of advices on the ED was 86%. Unplanned ED readmission occurred in 170 of 768 (22.1%) CC patients and in 205 of 857 (23.9%) IC patients (P=.11). Statistically significant secondary outcomes were ED LOS (CC 19.1 versus IC 12.7 hours; P=.0003) and hospitalization rate (CC 67.0% versus IC 70.0%; P=0.0026).

Conclusion: URGENT shortened ED LOS and increased hospitalization rate, but did not prevent unplanned ED readmissions.

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