

Changes in skeletal muscle mass following surgical aortic valve replacement. From baseline to 6 months follow-up.

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Aims To describe changes in skeletal muscle mass (SMM) in older patients before, 1 – and 6 months after surgical aortic valve replacement (SAVR).

Methods Secondary analysis from the prospective cohort study “Delirium in octogenarians undergoing cardiac surgery or intervention”. Inclusion criteria: 80+ years, acceptance for SAVR and willingness to participate. Exclusion criteria: inability to speak Norwegian. Data regarding SMM was collected from 78 patients at baseline, 1 and 6 months with bioelectrical impedance. Changes were studied with mixed effect models.

Results Average SMM values at baseline for included patients were 27.5 kg (SD 5.6). Values changed to 25.2 (SD 4.9) at 1-month follow-up and increased to 26.8 (SD 6.4) after 6 months.

Conclusions SMM declined the first month following SAVR. Despite an increase after 6-months, values did not reach those at baseline.

Health care professionals' working in COVID-19 intensive care units

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Background COVID-ICU health care professionals have been working in frontline with patients in need of intensive treatment. There is a lack of national knowledge of nurses and medical doctors experiences from working in COVID-ICU. The aim of the study was to gain knowledge about health care professionals preparedness and daily working condition in COVID-ICUs.

Methods Explorative methods using both questionnaires and focus group interviews.

Results Four hundred and eighty-four consenting nurses and medical doctors from twenty-seven ICUs with COVID-patients across Norway were included in the study from 6th May until 15th July 2020. Preliminary results indicate that health care professionals were well prepared for working in COVID-ICUs (77 %), and experienced both negative challenges, and positive learning during daily work in the ICUs.

Conclusion There is a need for future improvements to optimize health care professionals working conditions during a pandemic.

Percutaneous pulmonary valve implantation impact on clinical outcome, patients self-reported health, psychosocial function, and hospital costs in patients with congenital heart disease

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Surgery for congenital heart disease in childhood, often impairs the function of the pulmonary valve, and may lead to repeated valve repairing procedures later in life. Until recently, surgery has been the only effective intervention option. During the last decade, percutaneous pulmonary valve implantation has become a nonsurgical treatment option. In Norway, the first patients were treated with this technique at Oslo University Hospital in 2007. The early experience worldwide indicated good short time results and reduced the numbers of open heart surgeries the patients had to undergo during a lifetime.

In our thesis we applied different research methods to shed light on differences in outcomes between percutaneous technique and the conventional surgical treatment. The aims of the thesis were: 1) How did patients and the patients' next of kin experience the percutaneous pulmonary valve implantation method? 2) Were there differences in hospital costs between percutaneous pulmonary valve implantation and open-heart surgery? 3) Were there differences between the two methods in terms of psychosocial and clinical outcomes?

We found a considerable benefit in patient experiences and psychosocial function after percutaneous treatment. One may argue that patient-reported outcomes are the only real value measures for patients living with chronic disease. Studying the hemodynamic results, we found that the new treatment is in line with traditional surgery, but with fewer complications. When comparing the total in-hospital costs, we found the price of the interventional valve itself to represent a more important cost than even the long intensive care unit stay in the surgical group. With only a slight reduction in device cost, the new treatment will become cost effective for society.

Based on our findings, we assume that this mini-invasive method may have a positive impact on the patients' well-being throughout the life cycle.

Trajectories of pain in patients undergoing lung cancer surgery: a longitudinal prospective study

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Background: Lung cancer surgery is associated with high prevalence of pain, but longitudinal studies are scarce. We aimed to describe the pain trajectories in patients undergoing surgery for lung cancer.

Methods: Patients (n = 264) provided data on pain before, and 1, 5, 9, and 12 months after surgery. Pain profiles were analyzed by latent class mixed models (LCMMs).

Results: The occurrence of any pain increased from 40% before surgery to 69% after 1 month, and decreased to 56%, 57%, and 55% at 5, 9, and 12 months, respectively. LCMMs identified two classes; one class started low with high ratings after one month, then returning to a level slightly higher than baseline. The other class started higher with similar scores through the trajectory.

Conclusion: Pain was highly prevalent after surgery and subgroups could be identified based on different pain trajectories. This knowledge is important to tailor interventions and information.

A-169

Association between perception of the closing sound from mechanical heart valves and insomnia

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Background: The sound of mechanical heart valve is quite often clearly audible. Little is known how the valve sound affects the patient's sleep.

Purpose: To describe patients' perception of the closing sound from the valve and the association between subjective valve sound perceptions and insomnia.

Methods: Seven items assessed the audibility of the valve. The Minimal Insomnia Symptom Scale (MISS) was used to document sleep (score range: 0-12).

Results: Of 908 respondents, 245 had a mechanical valve. Mean age 60 years, and 76% were men. The insomnia sum score indicated that 47% had some degree of insomnia. Insomnia was associated with increased age ($p = 0.020$), female gender ($p = 0.026$) and high valve noise perception ($p < 0.001$).

Conclusion: For most patients with mechanical valves the sound of the valve is audible. Almost half of the patients had insomnia. Insomnia was associated with female gender, age and valve noise perception.

A-168

Men's health. A qualitative study on male patients' experiences of own health after invasive treatment for ischemic heart disease

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Background: Ischemic heart disease is one of the leading causes of mortality among men, and the health management of men, including knowledge and delay in help-seeking, are pivotal to the aetiology behind.

Aim: To explore how men experience and manage their own health while having received invasive treatment with coronary artery bypass grafting (CABG) or percutaneous coronary intervention (PCI).

Methods: The study applied a qualitative approach designed within a phenomenological-hermeneutical frame, guided by Paul Ricoeur's theory. Interviews were conducted between during 2019 with 21 male patients after discharge.

Results: After analyzing, the following themes were identified; *functioning as health*, *misinterpreting signs of illness* and *navigating life with ischemic heart disease*.

Conclusions: The findings of this study illuminate how a well-functioning body can give men a sense of freedom and control. Men tend to have difficulties interpreting signs of illness - failing to seek help when facing a serious health threat.

A-171

Pericardial fluid following cardiac surgery – a clinical case

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Background Pericardial fluid is a common complication following surgical aortic valve replacement (SAVR). One treatment option is pericardiocentesis, however this introduces a risk of iatrogenic damage with bleeding and cardiac tamponade.

Methods In this clinical case, we present a young man with a bicuspid aortic valve who was diagnosed with pericardial fluid several weeks after SAVR.

Results The patient was clinical stable. During a period for more than ten days, several attempts of pericardial drainage were made, and more than 1000 ml of fluid were drained, but ultimately he developed pericardial tamponade as a complication and had to go through emergency redo surgery. Thereafter he was discharged to the local hospital.

Conclusion Young patients have a higher risk of developing pericardial fluid and cardiac tamponade after cardiac surgery. Symptoms are often scarce as they compensate well and thus mask the signs of tamponade.

The Road to a Transcatheter Edge to Edge Repair: Patient Experiences Leading Up to the Procedure and in the Early Recovery Period

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Background: Mitral regurgitation (MR) is associated with morbidity, mortality, and poor quality of life. For patients at excessive risk for surgery, transcatheter edge to edge repair (TEER) of the mitral valve is recommended. Little is known about patient experiences of the procedure. Aim: to explore patients' experiences with a TEER procedure.

Methods: A prospective cross-sectional qualitative study was used. Semistructured interviews were conducted with 12 patients.

Results: The lived experience of MR involves experiences of challenges with everyday life and plummeting personal losses. The road to a TEER is perceived as long road that can involve challenges with geographic access and timing of procedure. Trust in healthcare providers, hope to return to normal functioning, and best treatment option are factors that influenced the experiences of patients with a TEER.

Conclusion: There is a need for comprehensive care pathways for patients with MR who are waiting for a TEER procedure.

A-172

Registry-Based Evaluation of Changes in Patient-Reported Outcomes after Transcatheter Aortic Valve Implantation

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Abstract:

Transcatheter aortic valve implantation (TAVI) is an established treatment option for aortic stenosis. The purpose of the study is to report on changes in patient-reported outcomes (PROs) after TAVI in a «real world» population using administrative registry data.

We conducted a retrospective observational cohort study of consecutive TAVI patients (2016-2019), with measurement of change of health status at baseline, 1-month, and 1-year. PROs were measured using the Kansas City Cardiomyopathy Questionnaire (KCCQ) to explore temporal changes.

Among 1,706 patients, baseline KCCQ was 45 (28.2, 67) with a mean improvement of 24.1 points at 30-day and sustained improvement at 1-year. Baseline health status, atrial fibrillation, previous stroke and renal impairment significantly predicted poor outcomes.

TAVI is associated with significant improvement in PROs. Baseline QOL is an important consideration in the assessment pathway for aortic stenosis. Future research is needed to identify patients who do not derive benefit over time.

A-173

Shared Decision-Making for the Treatment of Aortic Stenosis: Implementation Study Design

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Abstract:

Aortic stenosis is the most common acquired heart valve disease requiring intervention. Treatment options include surgery, transcatheter treatment, or focus on symptom management. Shared decision-making (SDM) enables information exchange that considers patients' priorities. Patient decision aids (PDAs) are tools that facilitate SDM. PDAs have not been widely adopted in the treatment of AS.

We will report on the study design grounded in the Ottawa Model of Research Use conceptual framework to evaluate the implementation of a novel set of PDAs for AS. The objectives are to select and tailor PDA implementation strategies and evaluate their implementation along key metrics. We will conduct a prospective multi-method study in 4 cardiac programs using a 2-phased approach to meet the objectives.

The use of PDAs can help empower patients to be effective partners in their treatment of AS.

Research is needed to study the effective implementation of PDAs to achieve sustained integration in clinical care

A-108

Return to work after coronary artery bypass grafting and aortic valve replacement surgery- hindering demographic and clinical factors

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Background: Heart disease represent a threat to a person's employment. Unemployment due to illness is known to harm psychosocial health. However, little is known about work participation after coronary artery bypass grafting surgery (CABG) and aortic valve replacement surgery (AVR).

Aim: To explore the literature on return to work (RTW) in patients undergoing CABG or AVR and identify clinical and demographic factors associated with RTW.

Methods: Scoping review

Results: Of 432 publications, 45 articles were included in the final analysis. Being female and having a pre-existing depression, limited secondary education, or low income was associated with a lower RTW rate. Patients with significant comorbidities, high NYHA were less likely to RTW.

Conclusions: Health personnel should be aware of these factors in the pre and post-surgery encounters with patients. More research is warranted to establish interventions to increase work participation after surgery.

Feasibility and acceptability of a real-time, exercise-based telerehabilitation program in older patients recently discharged after TAVI

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Aim: This study examined the feasibility of exercise-based cardiac telerehabilitation after TAVI as the use of telehealth technology to improve functional recovery has not previously been investigated.

Methods: The intervention lasted for 3 weeks and consisted of home-based online exercise training, the use of an activity tracker- and of a homesite and one online session with a nurse. Data collection included researchers' observations, logbooks and individual patient interviews.

Results: 5 out of the 13 included patients completed the intervention, median age 83 years. Easy access to supervised exercise training at home with real-time feedback were appreciated by the patients. No adverse events occurred. Barriers included participant's limited IT skills and poor data coverage.

Conclusion: Exercise-based telerehabilitation in the elderly after TAVI seems feasible and safe. Aspects that enhance retainment rates and support patient's IT skills need to be further addressed.

A-132

Co-creation of a telerehabilitation program for patients following Transcatheter Aortic Valve Implantation (TAVI).

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Aim: Based on participatory design, the aim was to identify the known and unknown needs for patients after TAVI to develop a user-adapted and feasible telerehabilitation program.

Methods: Participatory design with the use of qualitative interviews (N=11), cultural probes and workshops (N=2) in the need assessment and ideas generation phases. Patients, relatives, physiotherapists, physician, nurses, researchers and IT developers participated in one of the two the workshops.

Results: Inspired by the patients' perspectives and a previously developed telerehabilitation program Future Patient[i], a telerehabilitation program (TeleTAVI) was developed, ready for testing in a feasibility study.

Conclusion: The participatory design approach explored patient's needs for information, training and telerehabilitation after TAVI combined with health professionals, researchers and IT developers' innovative suggestions for the program.

A-153

Patients characteristics and intensive care unit stay after heart valve surgery in rheumatic heart disease : - a descriptive cross-sectional study

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Research in the field of postoperative intensive care observations in young patients with rheumatic heart disease is sparse.

The purpose of this study was to describe characteristics, intensive care observations and length of stay in patients undergoing cardiac surgery for rheumatic heart disease.

In this cross-sectional descriptive study design, quantitative data was collected at a governmental hospital in a low income country.

Clinical data from preoperative screening and the perioperative period, including the intensive care stay, were registered.

The findings of this study demonstrate that the number of valve procedures, systolic pulmonary artery pressure and day one postoperative thoracic drainage, were associated with the length of stay in the intensive care unit. Secondly, we demonstrate that increased systolic pulmonary artery pressure correlated with the use of vasoactive medications.

Association between depression and postoperativ delirium following cardiac surgery

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Background: Depression is common in patients with cardiovascular disease. Postoperative delirium(POD) is a serious complication of cardiac surgery and is associated with poor long-term prognosis.

The aim of this study was to investigate depression, evaluated by patient health questionnaire (PHQ-9), as a predictor for POD in cardiac surgery patients.

Methods: A retrospective analysis of 1120 patients who underwent cardiac surgery between 2013 and 2016 was performed.

Results: The incidence of POD was 26%. After adjustment for potential confounders, depression was associated with POD OR 2.19 (95% CI 1.43-3.34). The effect of depression on POD was strongest in patients <62 years of age OR 3.76 (95% CI 1.70-8.32).

Conclusion: Depression is associated with POD in cardiac surgery patients. The association is strongest among the youngest patients. All patients should be screened for depression before cardiac surgery and all patients should be screened for POD postoperatively.