Figure 1. Kaplan-Meier curves of the cum

P454

Night-time elevation angle in heart failure patients indicates orthopnea and paroxysmal nocturnal dyspnea

S J Rials[1]; J D Hatlestad[2]; A Smith[3]; D Pubbi[4]; D Slotwiner[5]; J P Boehmer[6]
[1]Grant Medical Center, OhioHealth, Columbus, United States of America; [2]Boston Scientific CRM, Saint Paul, United States of America; [3]Emory University Hospital, Atlanta, United States of America; [4]First Coast Heart And Vascular, Jacksonville, United States of America; [5]Long Island Jewish Medical Center, New Hyde Park, United States of America; [6]Penn State Milton S. Hershey Medical Center, Hershey, United States of America
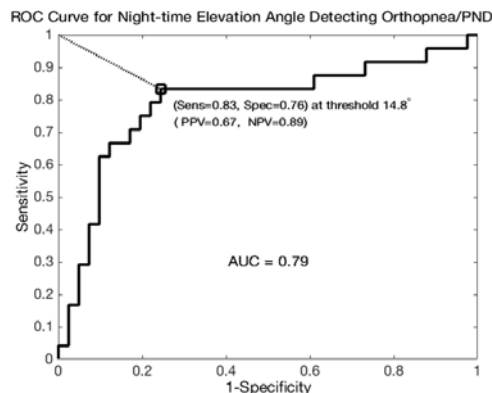
Background: Orthopnea and paroxysmal nocturnal dyspnea (O-PND) are cardinal signs of worsening heart failure (HF). Guidelines for HF patient management recommend routine assessment of O-PND. These postural symptoms are typically assessed by asking about patients' sleep angle in terms of number of pillows. We evaluated the use of automated posture sensing in assessing O-PND in HF patients.

Methods: 46 HF patients (35 male, 45-83 years of age, NYHA class I-III) in the MultiSENSE study wore an external posture monitoring device for a few days (0.9-14) at a time. At each patient visit, O-PND symptoms were assessed. We compared the device-determined night-time elevation angle (NTEA) for patient visits with & without reported O-PND symptoms.

Results: Patient visits associated with O-PND (n = 24) had an average NTEA of 23.2 ± 2.8 (mean $\pm$ standard error), compared to an average NTEA of 10.7 ± 1.7 for those patient visits not associated with O-PND (n = 41, p = 0.0001 using non-paired t-test). A receiver operating characteristic (ROC) curve analysis (see figure) yielded an area under the curve of 0.79 for NTEA detecting O-PND. Selecting an NTEA threshold of 14.8 yielded a sensitivity of 83% and specificity of 76%.

Conclusion: Orthopnea & PND are key symptoms of HF. Night-time elevation angle is indicative of these symptoms, presumably reflecting the tendency of patients to sleep partially elevated to avoid dyspnea. Monitoring posture in future devices may provide valuable insight for the remote management of HF patients.

P455

Acceptance of home telemonitoring in patients with heart failure: the ecare client impact survey in the european funded project smartcare

D Radini[1]; GM Apuzzo[1]; K Stellato[1]; G Sola[1]; N Delli Quadri[2]; E Fragiacomo[2]; A Di Lenarda[1]
[1]Cardiovascular Center A.S.S. 1 of Trieste, Trieste, Italy; [2]Ospedale Cattinara, Trieste, Italy

Objectives: The main goal of this work was to analyze the impact of telemonitoring (TLM) in elderly patients with chronic or post-acute heart failure (HF), and the presence of $\geq$1 social needs, requiring intensive home monitoring.

Methods: The SmartCare Project was developed as a cohort, prospective, randomized, controlled trial that enrolled from November, 2014 to February, 2016, 201 pts in home care (>50 years, at least 1 severe chronic diseases - HF, COPD or diabetes - and $\geq$1 missing BADL) to intervention arm (INT - automatic BP monitoring, weight, FC, SO2, ECG: n = 100) or usual care (UC; n = 101). At the end of the program, a culturally adjusted eCare Client Impact Survey (eCCIS) was collected in pts randomized to INT.

Results: General data collected: the patients enrolled were elderly (81 years, 54% males) and with multimorbidities (44% Charlson Index $\geq$5; 58% $\geq$7 drugs/day). HF was present in 79% of pts, COPD in 38%, diabetes in 68%. Most pts showed a low level of education (primary school in 58% of end users); 38% were living alone, and 42% were reliant on care. Data eCare Client Impact survey was collected in 45 subjects out of 88 INT users. Reasons for non-responding were: death, hospital admission, not directly involved in self-monitoring activities. Out of a total of 45 respondents, 26 end users experienced a positive increase in motivation; 35 experienced a better emotional wellbeing; 30 experienced a greater ability to perform daily physical activities; 30 had a reduction in anxiety; 29 felt less lonely; 19 experienced an improvement in their relationship with their family carer; 29 experienced an improvement in their relationship with their professionals; 35 felt a general improvement in their ability to manage their health condition; 39 expressed satisfaction with the service, and 39 felt the service was well worth the effort and would continue to use it.

Conclusion: While considering that the questionnaire involved about 50% of patients in the intervention group, the data collected showed good acceptance of TLM system with improved self-care and relationships with relatives and health workers, reduction of anxiety and loneliness. Patients have also expressed a positive opinion about the service and wish to continue with TLM.

P456

How do cardiologists and nurses think about telemonitoring in patients with heart failure? A survey in Lithuania and Norway

E Lycholip[1]; IT Aamodt[2]; I Lie[2]; J Celutkiene[1]; A Stromberg[3]; T Jaarsma[4]
[1]Vilnius University, Clinic of Cardiac and Vascular diseases, Centre of Cardiology and Angiology, Vilnius, Lithuania; [2]University of Oslo, Oslo University Hospital, Department of Cardiothoracic surgery, Oslo, Norway; [3]Linkoping University, Department of Medical and Health Sciences, Linkoping, Sweden; [4]Linkoping University, Department of Social- and Welfare studies, Norrkoping, Linkoping, Sweden

Background: Currently there is still lack of evidence that telemonitoring in heart failure (HF) patients is an effective way to early notice and react to the patient's deterioration when at home, to reduce the frequency of hospitalisations. Meanwhile these systems are implemented in several parts of Europe. Little is known about the opinion of cardiologists and cardiac nurses regarding the suitability and relevance of telemonitrong in Norway and Lithuania.

Purpose: To describe health care professionals' (HCP) perceptions of the feasibility and relevance of telemonitoring in patients with HF in Lithuania and Norway.

Methods: The survey was performed nationwide in two Nordic Baltic countries enrolling cardiologists and cardiac nurses working with HF patients in 47 hospitals in Lithuania and 60 hospitals in Norway. Validated translations from English to Lithuanian and Norwegian of a previously developed validated questionnaire were used. Data were collected between September and December 2016.

Results: Responses from 541 HCP (n = 315 in Lithuania [135 cardiologists, 173 nurses] and n=226 in Norway [62 cardiologists, 157 nurses]) were analysed. Educational degree of respondents included 12% and 9% doctoral, 36% and 11% master and 21% and 67% bachelor in Lithuania and Norway, respectively.

Almost all participants use e-mail and Internet, while 72% and 93% in Lithuania and Norway, respectively, use e-mail in their mobile phones. More than one fifth of respondents in both countries were familiar with TM.

The majority of the cardiologists and nurses in both Nordic Baltic countries consider the outpatient clinic and home visits most often as good ways to follow-up patients after discharge. In total 49% and 58% of the participants in Lithuania and Norway answered that internet-based monitoring was a good way of follow up. Substantial proportion of respondents reported telemonitoring as a relevant (55 and 58%) or very relevant measure (14 and 20%) and frequently named daily feedback to the patient as feasible (22 and 47%).