

was classified based on LVEF into HFpEF ($\geq 50\%$) & HFrEF ($< 50\%$). The precipitants were defined as Infections - Diagnosed based on clinical, laboratory and imaging findings, felt to be clinically contributing Medication Adherence - assessed using Morisky 8 Point medication adherence scale, Arrhythmias - documented on ECG & clinically felt to be contributing, predominantly atrial fibrillation Ischemia - based on history, clinical and ECG findings with or without cardiac enzyme rise, Medication change by other services involved in care of HF patient - defined as a reduction in HF therapies or use of contraindicated therapies Dietary non-compliance defined as excess sodium intake, Excess alcohol intake - defined as > 1 iu/d for women & > 2 iu for men Others - precipitants not falling in the above categories The identified precipitants were analysed against variables of interest, using chi squared, independent t test & fisher exact test, a p value of < 0.05 was considered significant.

Results Single Precipitant was identified in 43.7% (n=59), multiple precipitants were identified in 29.5% (n=35), no precipitant was identified in 30.4% (n=41). In dHF (n=67) predominant precipitants were LRTI (43%), Arrhythmias (39%), non compliant diet (34%), Ischemia (21%), Excess Alcohol (15%), Medication Change (7%), Others (4%) & Low Medication Adherence (1%). In eHF (68) predominant precipitants were LRTI (27%), Non compliant diet (24%), Arrhythmias (22%), Medication change (18%), Low Medication Adherence (15%), Excessive alcohol (15%) Ischemia (6%) & others (1%). No statistically significant difference was observed between HFrEF & HFpEF.

Conclusion Major observations from this prospective analysis highlight no significant difference between precipitants recorded comparing HFpEF & HFrEF in the total population. In eHF these precipitants remain prevalent, but of note, medication adjustment & medication adherence remain a significant problem despite emphasis on self care education in these programs. These findings highlight the need for improvement in patient education & communication among different services involved in care of HF patient.

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Development and validation of a Portuguese questionnaire to evaluate knowledge about heart failure

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Introduction . Heart Failure (HF) has a difficult diagnosis and, once diagnosed, it is essential to give patients critical knowledge to deal with it. The greater the information patients have about their illness, the lower the chances of hospital readmission. Knowledge of the disease includes the cause, symptoms, probable duration and expected evolution of the clinical condition.

Purpose. The present research aimed to adapt the "Knowledge Questionnaire on Chronic Heart Failure" developed by De Walt et al. (2004) to the Portuguese context. Method. The Portuguese version was developed across six stages: independent translation; discussion to obtain a single version; retroversion; questionnaire evaluation by cardiologists; first amendment; pilot test; second amendment. The final version achieved was then tested across three studies. In Study 1, 57 subjects (of which 37 women), aged between 14 and 66 years (M = 40, SD = 35.3), were randomly divided by two experimental conditions: flyer-questionnaire (FQ) vs. questionnaire-flyer (QF). In the FQ condition, after a presentation of an informative flyer about on HF, participants were asked to complete the questionnaire independently. In the QF condition, the reverse procedure was followed (i.e., the questionnaire was filled in before the flyer presentation). In Study 2, 21 participants (of which 10 women), aged between 20 and 34 years (M = 25.86, SD = 3.59), were asked to fill in the HF questionnaire before and after a 5-min period to read the flyer. Finally, in Study 3, 169 subjects with HF (of which 47 women), aged between 32 and 87 years (M = 62.57, SD = 10.93), were asked to fill in the questionnaire.

Results. In Study 1, FQ participants (M = 9.31, SD = 1.81) gave more correct responses than those in the QF condition (M = 5.90, SD = 2.40), $t(55) = -5.95$, $p < .001$, $d = 1.60$. In Study 2, participants gave more correct responses after reading the flyer (M = 10.38, SD = 1.69) than before reading it (M = 6.48, SD = 2.89), $t(30) = -6.77$, $p < .001$, $d = 1.64$. Finally, Study 3 participants with HF were found to give 8.53 correct answers out of 14 (SD = 2.19). Additionally, results showed that women had more knowledge than men (M = 9.13, SD = 2.08 vs. M = 8.30, SD = 2.19), $t(167) = 2.25$, $p = .026$, $d = 0.38$, and that greater knowledge was associated with higher education ($r = .34$, $p < .001$) and younger age ($r = .17$, $p = .03$).

Conclusion. Overall, the present research showed that the Portuguese version of the HF knowledge questionnaire is valid instrument for the assessment of knowledge about HF. This seems a useful tool for doctors to assess their patients' knowledge of the disease and act accordingly. Patients who have a chronic illness, such as HF, should have an adequate awareness about their condition, as this awareness can make a significant difference in the treatment.

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Active screening using electronic medical record system for patient recruitment in case management of heart failure with reduced ejection fraction

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Introduction Patients with heart failure (HF), especially those with reduced ejection fraction (HFrEF) usually have longer hospitalisation days and higher re-hospitalisation rate. Case management and multidisciplinary teamwork have been reported to improve these outcomes. However, the recognition of patients with HF might be missed or delayed during the hospital stay, and these interventions are traditionally initiated only after the consultation of the cardiologists.

Purpose We aimed to assess if the active screening for the HF patients with the electronic medical record (EMR) system would shorten their hospital days and decrease re-hospitalisation rate.

Methods We constructed and launched a mobile system which can connect to the EMR since 01 July 2018. The system was designed to actively identify all hospitalised patients with a diagnosis of heart failure (ICD-10: I50) and left ventricular ejection fraction (LVEF) $\leq 35\%$ during admission. It notified the HF multidisciplinary team automatically, and the team will provide healthcare and the relevant education to the patients like the way before this system was launched. Regarding the outcome evaluation, we compared the length of hospitalisation and three-months re-hospitalisation rate before and after launching the system.

Result A total of 15 patients were actively identified three months after launching the mobile system with the connection of EMR. Their mean age was 59.4 ± 14.9 years, and 80% of them are men. The mean LVEF was $26.6 \pm 6.3\%$. Comparing to the 36 patients before using the system, the demographic characteristics are similar, except a lower prevalence of coronary artery disease and hypertension. Regarding the primary outcome, three-months re-hospitalization rate after launching mobile system significantly decreased from 12% to 0% ($p = 0.01$) and the hospitalisation days marginally decreased from 10.6 to 7.2 days ($p = 0.06$).

Conclusion The preliminary analysis showed that active screening system through the connection of the EMR system might recognise the patients with HFrEF earlier. By early recognition, we could initiate interventions promptly and hence, improve the HFrEF outcomes. In the future, longer follow-up and larger cohort studies are needed to confirm the benefits of the active screening and the continuing multidisciplinary team care for patients with heart failure.

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The examination about the clinical feature related to re-admission in congestive heart failure patients introduced our original clinical pathway

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Background: We had introduced original clinical pathway (PATH) in congestive heart failure (CHF) cases for efficient medical care from August 2015. Introducing PATH, the great shortening of hospitalization period was achieved. But we can not still confirm the reducing effect about re-admission with CHF exacerbation even in the cases introduced PATH.

Purpose: For finding of the clue about suppression of re-admission, we retrospectively investigated the clinical feature about the CHF cases who were introduced PATH and re-admitted with worsening of CHF after discharge.

Methods: We enrolled 246 cases (mean age: 80 ± 11 years old, male/female: 139/107 cases), admitted with CHF in our hospital and introduced PATH for the first time between August 2015 and November 2017. And we divided them in two groups, Y-group consisted of the 67 cases who were re-admitted by worsening of CHF within 1 year after discharge and N-group consisted of 179 cases who were not re-admitted within 1 year. About all cases in both groups we investigated patient characteristics, various clinical data on first admission and clinical course until discharge. And we examined the difference of each survey item between two groups.

Results: In Y-group, the mean age was significantly higher (82 ± 9 vs 79 ± 11 years old); $p < 0.05$) and the ratio of cases with admission history by CHF within the past 3 years was higher than N-group (43 vs 17%; $p < 0.0001$). The ratio of cases who had the past history of any coronary heart disease as an underlying disease of CHF was higher in Y-group (40 vs 26%; $p < 0.05$). About cardiac function, the mean value of brain natriuretic peptide concentration in blood and the ejection fraction