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Conference abstract

Follow-up and treatment of an instable patient with heart failure using telemonitoring and an ICT-guided disease management system; a case study

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Abstract

Background: In the last decades, the introduction of information and communications technology (ICT) in healthcare promised an improved quality of care while reducing work load, and resulting in a more cost-effective system. These goals might be realised by the use of computerised disease management systems (DMS) and telemedicine (TM).

Aim: This case study describes the potential of a computerised disease management system in combination with telemonitoring in a patient with chronic heart failure (HF) who was frequently readmitted to the hospital.

Methods: During a period of 10 months we followed and treated a male patient (age, 50, LVEF 29%) after five HF hospitalisations within six months. Therefore we used an ICT-guided DMS, in combination with TM. Predefined ranges of weight, blood pressure and heart rate were formulated. In case of serious deviated measures at home, the HF nurse was immediately informed by SMS and E-mail. With an interactive system (health monitor) the patient answered questions about his condition, including HF symptoms. In case of slight deviation of the predefined ranges, without an increase of HF symptoms, the patient gets an automatic generated advice on actions that must be taken.

Results: The patient in our case reached a stable phase of his HF. We prevented at least two readmissions for HF by adjusting the dose of diuretics in temporary in an early stage of deterioration. Furthermore, we were able to up titrate medication, as recommended in the current guidelines, to optimal dosage, without visits to the outpatient HF clinic.

Conclusion: Telemonitoring, driven by an ICT-guided DMS, can be a very useful tool to prevent HF related readmissions and up titrate HF medication. Despite the expected opportunities of these combined systems, there is a great lack of experience and evidence for widespread implementation. To examine whether this developed combined model indeed leads to a lower readmission rate for HF, lower costs, higher quality of life and possibly lower mortality, a large randomised trial will be necessary.

Keywords

heart failure, disease management, telemonitoring, decision support, telehealth, computer support