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Telemedicine for Decreasing Mortality and Morbidity in Patients with Congestive Heart Failure – The Experience of SHL-Telemedicine in Germany

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Purpose:

To investigate whether telemonitoring in patients with chronic heart disease CHD and diastolic and systolic dysfunction reduces all-cause mortality, morbidity and costs.

Methods:

A total of 978 CHD patients with at least one hospitalization for cardiac deterioration within the last 24 months were studied. Of them, 326 patients under telemonitoring were matched to 652 patients under standard care according to age, sex, risk factors, and etiology using a retrospective, observational design. The telemonitored patients were asked to transmit body weight, blood pressure and heart rate daily to the telemedical center. They were also encouraged to call the center 24/7 for any medical cause and to transmit a 12-lead ECG when indicated. In addition, they received pamphlets on proper diet and nutrition, symptom recognition and self-care behavior. Follow-up took place 1 year later.

Results:

Mortality in the telemonitoring group was lower by 78% (3 [0.9%] as compared to the standard treated group 27 [4.1%], p=0.006). During follow-up, 145 telemedicine patients (45%) were admitted to hospital 310 times for various indications and the mean hospital stay was 7±18 days. Among the patients in the standard care group, 422 (65%) were hospitalized for a total of 837 episodes and the mean hospital stay was 16±35 days ($p<0.0001$ for both parameters between the two groups). Hospital costs substantially dropped in the telemedicine group (by 40%: from 5,112±11,480€ to 3,064±8,109€; $p<0.001$).

Conclusion:

Telemonitoring was well-accepted by both patients and doctors. Telemonitoring of high-risk CHD patients provided substantial benefits in terms of mortality and morbidity and considerable savings in costs.