Clinical effectiveness and service implications of telemonitoring for chronic obstructive pulmonary disease

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Conference Abstract

Clinical effectiveness and service implications of telemonitoring for chronic obstructive pulmonary disease: the TELESCOT COPD randomised controlled trial

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Abstract

Introduction: Telemonitoring offers a potential solution to the challenge of providing care for the increasing number of people living with long-term conditions such as chronic obstructive pulmonary disease (COPD). Five systematic reviews have concluded that the evidence for telemonitoring in COPD is inconclusive. Telemonitoring interventions generally include enhanced clinical care in order to provide monitoring services so that it is unclear if telemonitoring alone improves clinical outcomes and reduces hospital admissions

Aim To determine if telemetrically supported self-monitoring of COPD postpones hospital admissions when both intervention and control groups receive optimised care.

Methods: This was a one-year, researcher-blind randomised controlled trial in UK primary care. Patients with a COPD admission in the previous year were randomised centrally to telemonitoring or traditional modes of monitoring: both groups received the same clinical care. The primary outcome, assessed by a researcher blinded to allocation, was time to first hospital admission caused by a COPD exacerbation over the trial year. Other outcomes included number of

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admissions, bed days, deaths and health-related quality of life (St George's Respiratory Questionnaire (SGRQ)). The specialist community services recorded details of all contacts with the 186 patients under their services.

Results: We randomised 256 patients (128 to telemonitoring): baseline characteristics were similar in both groups. Using an intention-to-treat analysis, there was no significant difference in the hazard ratio (HR) for admission in the control group compared with the telemonitoring group: adjusted HR 1.02 (95% CI 0.70 to 1.49). 61 patients in each group had an admission. There was no significant difference in the mean number of admissions per person (telemonitoring: 1.2 (SD 1.9), control: 1.1 (SD 1.6) p=0.54), or in their duration (telemonitoring: 9.4 days (SD 19.1) vs control 8.8 days (SD 15.9) p=0.66). There were 16/128 deaths in the telemonitoring group and 21/128 deaths in the control group: this difference was not statistically significant (OR 0.73 95%CI 0.36 to 1.47). Telemonitoring did not affect quality of life (mean St Georges Respiratory Questionnaire at 1 year: telemonitoring 68.2 (SD 16.3) vs control 67.3 (SD 17.3), mean difference 1.55 (95% CI -1.44 to 4.53).

There were 2,431 alerts resulting in telephone contacts with the 93 telemonitoring patients under the care of the community teams, 112 of which resulted in a home visit. In addition, the telemonitoring patients received 521 telephone calls and 819 home visits which were not associated with alerts. By comparison, the patients in the control group only received 352 telephone calls and 682 home visits.

Conclusions: When both groups received optimised care, telemonitoring did not appear to reduce the time to a hospital admission, duration of hospital admissions or increase quality of life. Telemonitoring triggered a large number of alerts which resulted in a substantial increase in the number of telephone calls and home visits.

Keywords:

chronic obstructive pulmonary disease, telemonitoring, randomised controlled trial

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