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POSTER ABSTRACT

Telemonitoring of seniors with comorbid hypertension and type 2 diabetes: study protocol and first preliminary results of a randomised multicenter pilot study

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Introduction: Arterial hypertension (AH) and type 2 diabetes (T2D) are leading chronic diseases that frequently co-occur and share the same risk factors. The prevalence of their comorbidity increases with age and is particularly high in a group of seniors. Although both diseases can be treated, physicians have been unable to stop their continued growth. One of the approaches to better disease control could be remote monitoring of blood pressure (BP) and blood glucose (BG). Previous studies have shown a significant long-term clinical impact of telemonitoring, particularly in controlling BG, while the impact on BP is still uncertain. In addition, only a few studies have been conducted in a group of seniors who are at highest risk for cardiovascular mortality and could benefit significantly from telemonitoring.

Aims and Methods: SCUBYTel is a multicenter randomised controlled pilot study comparing telemonitoring of BP and BG (experimental group) with standard care (control group) that began in March 2021. The protocol for the study was registered in the ISRCTN registry (reference number 31471852). The study will be conducted in three primary healthcare centres in Slovenia and will include patients with comorbid AH and T2D aged over 65 years, randomised in a 1:1 ratio to the experimental and control groups. The study will be conducted in two cycles, each lasting one year. The first 60 patients were enrolled in the first cycle. Another 60 patients will be enrolled in the second cycle.

The study's primary objective is to determine whether BP and BG telemonitoring is superior to standard care in reducing BP and BG, thereby improving quality of care, and reducing healthcare expenditures. The secondary objective is to determine whether BP and BG TM is a feasible method for patients and healthcare workers.

Results: Preliminary results show a significant reduction in systolic BP (-13.4 mmHg, 95% CI -17.8 to -9.0), diastolic BP (-4.6 mmHg, 95% CI -6.5 to -2.8) and fasting BG (-1.0 mmol/L, 95% CI -1.6 to -0.4) in the experimental group at 6 months compared with baseline. Compared with the control group, a significant decrease in systolic BP (-9.5 mmHg, 95% CI -17.7 to -1.2) and fasting BG (-1.2 mmol/L, 95% CI -2.1 to -0.2) was observed 6 months after study entry, whereas there was no

significant decrease in diastolic BP (-2.9 mmHg, 95% CI -7.8 to 2.0). Importantly, no significant differences were found between groups in observed outcomes at baseline.

Conclusions: Telemonitoring of BP and BG is an acceptable method of remote care for seniors with significant short-term clinical impact. However, the major limitation is seniors' lack of ability to use modern technologies. Therefore, careful patient selection is critical to the success of telemedicine. In addition, the long-term impact still needs to be clarified.

Implications for applicability, sustainability, and limitations: Given the increasing workload of primary care physicians and the overall need to expand medical care, improve healthcare quality, and reduce healthcare costs, telemedicine offers a sustainable and applicable method of care. However, careful clinical and cost-effective considerations should be made before implementation.