MANAGING HYPERTENSION IN URBAN UNDERSERVED SUBJECTS USING TELEMEDICINE: A CLINICAL TRIAL

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Background: Telemedicine coupled with home measured blood pressure (BP) has shown benefit in hypertension (HTN) management. In this study we examined the benefit of using a telemedicine system for management of HTN in an underserved urban community characterized by a high incidence of both hypertension and diabetes.

Methods: 241 patients with systolic BP≥140 mmHg were randomized to usual care (C, N=121) or Telemedicine (T, N=120). After randomization, C patient were managed by their primary care provider (PCP) with no further communication. T patients self monitored BP and reported their data via telephone or Internet to our research center and a monthly status report was sent to their PCP. The T-group reported BP, heart rate, weight, steps/day, and tobacco use twice weekly. All patients had baseline and 6-month follow-up visits.

Results: Mean age was 59.6 years, mean BMI was 33.7, 79% were female, 81% African American, 53% were at or below the federal poverty level, 20% were smokers, 32% were diabetics. Initial BP: 155±15/88±11. Baseline data were similar for C and T. 206 subjects (C: 107 T: 99) completed 6 month followup. Goal BP was achieved in 58.2% of T and 52.1% of C (P=0.26) in non-diabetics, and in 36.7% of T vs. 29.4% of C in diabetics (P=0.36). The T effect on systolic BP was significant in non-diabetics (T: -19±20, C: -12±19 mmHg, P=0.037) compared to diabetics (T: -17±21, C: -18±17, P=0.760). HTN medications increased by 10% in T, compared to no change in C (P=0.024). PCP encounters/6 months were higher in diabetics (4.0±2.9, vs. 2.6±2.9, p=0.004). T subjects reported BP 7.7±6.9 days/month. Outcome was not affected by age, sex, ethnicity, education or income.

Conclusion: Telemedicine communication resulted in a greater reduction in systolic BP compared to usual care in non-diabetic hypertensive subjects without evidence of coronary heart disease. Diabetics showed similar BP reduction in usual care and Telemedicine groups. Improved BP control was associated with more prescribed medications in the T group. Telemedicine is a useful tool for managing hypertension among non-diabetic asymptomatic subjects. (NCT00644267).