



Safety, feasibility, and Acceptability of TElemedicine for hypertension in primary care: a proof-of-concept and pilot randomized controlled trial (SATE-HT)

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Background:

- telemedicine improves blood pressure (BP) control
- unclear whether it could replace face-to-face consultations in patients with optimal BP control

Aim:

The multi-center, 6-month randomized controlled trial:

P: patients on anti-hypertensive drugs and with good BP control

I: telemedicine: automatic drug refills and no doctor consultation if optimal BP control confirmed by home BP, which were sent to physician-in-charge

C: usual care

O: primary: feasibility/ acceptability

O: secondary outcomes:

- BP on office BP/ABPM
- Number of consultations
- Patients' interview

Results

- 49 patients recruited in 6 months
- (Only 1 patient immediately dropped out after recruitment due to family objection)
- retention rate was 98%
- Only 55% completed ABPM at study end-point with no adverse events in both arms
- Telemedicine saved GOPC consultations at 6-month (0.8 vs 2 consultations, $p < 0.01$)
- Similar BP in both groups at 6-month

	Intervention (N=24)	Usual care (N=25)	
Blood Pressure			
24h Systolic ABPM (mmHg)	126.2 (8.7)	124.8 (10.4)	0.60
24h diastolic ABPM (mmHg)	78.4 (11.3)	79.8 (9.0)	0.88
Daytime Systolic ABPM (mmHg)	128.2 (8.4)	126.9 (9.3)	0.41
Daytime diastolic ABPM (mmHg)	79.9 (10.9)	81.6 (8.9)	0.86
Office systolic BP (mmHg)	125.0 (10.0)	129.8 (9.5)	0.089
Office diastolic BP (mmHg)	73.0 (6.6)	71.0 (8.4)	0.38

- Interviewees reported system was convenient, timesaving, cost saving, and educational:

Quantitative results	Qualitative results
High retention rate (98%)	Participants found the telemedicine system saved time and was convenient Participants perceived that the healthcare resources can be allocated better and be given to patients in need
Similar BP and physical outcomes between both arms	Telemedicine systems prompted more self-monitoring and self-management. It also taught patients the cut-off of elevated BP Participant were reassured when normal BP was detected at home
No adverse event was detected and no increase in hospitalization, emergency department visits in the telemedicine group	Participants felt that the telemedicine system was safe. They were allowed to see their doctors if they had new problems or suboptimal BP control
Many participants did not undergo ABPM	ABPM was perceived as inconvenient. Participants did not understand why ABPM was needed.

Conclusion:

- High recruitment rate and high retention rate making future definitive RCT feasible
- Telemedicine system was well-accepted by patients and appeared safe

For future definitive RCT:

- Incentives needed for ABPM
- Cost effectiveness analysis is needed
- Longer follow-up period
- Physicians' view on telemedicine system is needed.

