Text message remote blood pressure monitoring eliminated racial disparities in postpartum hypertension care

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INTRODUCTION

• Significant racial disparities in maternal outcomes exist
  • Black women are:
    • 3-4X more likely to die from pregnancy causes
    • More likely to develop preeclampsia
    • 3X more likely to die from hypertensive disorders
• ACOG recommends monitoring blood pressure (BP) for 72 hours and again at 7-10 days postpartum (PP) in women with hypertensive disorders
• Black women are often disproportionately affected by barriers to PP visit attendance
• Over 3 year time period, only 42.5% of non-black women and 24% of black women attended their scheduled PP office BP check at HUP
• Prior RCT (Hirshberg et al, BMJ Qual Saf 2017) showed that text messaging was more effective in obtaining BP values and decreasing readmissions in all at risk women
• Objective: To evaluate whether a text-based BP monitoring program could reduce racial disparities in postpartum hypertension care

METHODS

• Planned secondary analysis of prior RCT:
  • TextBP, ClinicalTrials.gov NCT03185455
  • Inclusion: PP women with pregnancy related HTN, > 18 years old, English speaking, unlimited text messaging
  • Randomized to 2 weeks of text-based monitoring or usual care, office based in-person BP checks
  • Primary outcome: BP ascertainment (defined as office visit attendance or at least one BP texted)
  • Secondary outcomes: compliance with ACOG guidelines, need for oral antihypertensive medication, HTN-related readmission
  • All outcomes were compared among black and non-black women based on self-reported race
  • Chi square used to compare categorical values
  • Poisson regression with robust variance assumption
  • Test for interaction between BP ascertainment and race by trial arm to evaluate the impact of texting on disparity between black and non-black BP ascertainment

PROTOCOL

- 4-6 day PP visit for nursing BP check provided at discharge
- Randomization to 2 weeks of text-based monitoring or usual care, office based in-person BP checks
- Omron BP monitor provided
- Immediate feedback per algorithm
- MD escalation of care and initiation of BP med as indicated
- Twice daily text reminders to check/text BP
- IN/MO escalation of care and initiation of BP med as indicated

RESULTS

- 206 women randomized (103 in each arm)
- 71% of women in usual care and 66% of women in the texting program were black
- Black women were more likely than non-black women to be younger (mean age 27.1 vs 31.3 yrs, p<0.001), have Medicaid insurance (76% vs 20%, p<0.001), have higher BMI (35.1 vs 31.9 kg/m², p=0.008), and be multiparous (54.6% vs 24.6%, p<0.001)
- Gestational age at time of HTN diagnosis (36.7 vs 37.1 weeks) and severity of diagnosis (38.4% vs 30.7% severe disease) was not different by race (p=0.57 and p=0.30, respectively)
- Within text messaging group, no difference in BP ascertainment at 7-10 day PP, as recommended by ACOG, by race (83.8% black vs 86.6% non-black, p=0.52)
- Among black women who texted or attended their office BP check, no difference in percent who required new HTN medication or dose adjustment after discharge (20.8% office vs 19% text)
- No HTN readmissions with text-messaging compared to 4 HTN readmissions (3 of 4 in black women) in usual, office-based care

CONCLUSIONS

• Text-based monitoring eliminated the observed racial disparity in PP HTN surveillance
• Text messaging allowed for ascertainment of critical information and would have likely led to medication initiation in an additional 20% or more black women who missed an office visit
• Text messaging is an innovative way to equalize and engage women of all races in the PP period
• May reduce postpartum maternal morbidity and mortality
• is a way to reduce disparities in maternal and long-term health

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