Does remote blood pressure monitoring improve patient outcomes postpartum?

Yes, in patients with hypertensive disorders of pregnancy enrolled in remote blood pressure monitoring (RBPM) postpartum (n = 1,700), adverse outcomes were reduced in the first 6 months after childbirth compared with propensity score matched controls (n = 2,297), according to results of a retrospective cohort study. Fewer emergency department visits and readmissions were noted, translating into lower health care costs.

FAST TRACK

This retrospective cohort study followed patients with hypertensive disorders of pregnancy who were enrolled in a twice-daily text message–based remote blood pressure monitoring program for 10 days postpartum

Hirshberg A, Zhu Y, Smith-McLallen A, et al. Association of a remote blood pressure monitoring program with postpartum adverse outcomes. Obstet Gynecol. 2023;141:1163-1170. doi:10.1097/AOG.0000000000005197.

EXPERT COMMENTARY

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Hypertensive disorders of pregnancy account for a significant amount of morbidity during pregnancy and postpartum. In the pregnant population, data have shown that the implementation of a standardized blood pressure education program, provision of a blood pressure cuff, and assistance with postpartum follow-up result in improved blood pressures and postpartum follow-up for up to 6 weeks. In the nonpregnant population, literature suggests that RBPM in patients with hypertension results in improved outcomes, although the long-term impact of RBPM in the postpartum population remains unclear.

Recently, Hirshberg and colleagues published the results of a retrospective cohort study that assessed the impact of RBPM with text message reminders for 10 days postpartum on a composite of adverse maternal outcomes, readmissions, and follow-up within 1 year postpartum.[1]

Details of the study

The retrospective cohort study was conducted during 2017–2021 based on insurance claims of patients with hypertensive disorders of pregnancy who were enrolled in a twice-daily text message–based RBPM program for 10 days postpartum.

Dr. Rana reports serving as a consultant to Roche Diagnostics, Siemens, and Thermo Fisher Scientific, and has received funding from Roche Diagnostics and Siemens for studies related to the use of angiogenic factors in pregnancy. Dr. Bisson reports no financial relationships relevant to this article.

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Data from 1,700 patients enrolled in RBPM were compared with that of propensity score matched controls that included 2,297 women not enrolled in RBPM. Of these controls, 1,276 patients (cohort C) simultaneously received care at other institutions without RBPM, and 1,021 patients (cohort A) received care at the same institution prior to implementation of RBPM.

Results. Patients in the RBPM group were found to have a significantly lower rate of composite adverse maternal outcomes compared with their matched cohorts in the year after delivery. (Individual adverse outcomes included stroke, disseminated intravascular coagulation, eclampsia, pulmonary edema, renal injury or liver failure, HELLP [hemolysis, elevated liver enzymes, low platelet count] syndrome, myocardial infarction, and cardiomyopathy.) Rates were 2.9% versus 4.7% (odds ratio [OR], 0.61; 95% confidence interval [CI], 0.40–0.98) in the RBPM group compared with cohort A; rates in the RBPM group compared with cohort C were 3.2% versus 4.5% (OR, 0.71; 95% CI, 0.47–1.07).

Although not statistically significant, rates of emergency department visits and readmissions also were lower in the RBPM patients. Those enrolled in the RBPM program were more likely to have follow-up with cardiologists or specialist visits within 6 months postpartum. Fewer emergency department visits and readmissions resulted in lower health care utilization costs.

Study strengths and limitations

This study's strength lies in its design and implementation of standardized protocols that allowed assessment of clinically meaningful outcomes postpartum. Although the program for RBPM was for only 10 days postpartum, it showed effects beyond the timeframe of the direct care. No such prior data exist evaluating a program's effectiveness in improving postpartum clinical outcomes and costs through 1 year postdelivery.

Study limitations include residual bias from unobserved confounders, analysis of only 1 payer type, lack of patient level data, and evaluation of disparity. ●

PHOTO: MICROGEN/SHUTTERSTOCK

WHAT THIS EVIDENCE MEANS FOR PRACTICE

Previous work by Suresh and colleagues illustrated that a standardized postpartum blood pressure monitoring quality improvement initiative resulted in better blood pressures, improved postpartum visit adherence, and reduced disparity.[2] The study by Hirshberg and colleagues furthers these findings, illustrating how uniform protocols surrounding preeclampsia management in the postpartum setting could further improve morbidity and mortality in the year following childbirth. Such protocols should be incorporated hospital-wide in standard obstetrical management.

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FAST TRACK

Patients in the RBPM group had a lower rate of composite adverse maternal outcomes compared with their matched cohorts: 2.9% vs 4.7% compared with cohort A and 3.2% vs 4.5% compared with cohort C

References

1. Hirshberg A, Zhu Y, Smith-McLallen A, et al. Association of a remote blood pressure monitoring program with postpartum adverse outcomes. *Obstet Gynecol.* 2023;141:1163-1170. doi:10.1097/AOG.0000000000005197.
2. Suresh SC, Duncan C, Kaur H, et al. Postpartum outcomes with systematic treatment and management of postpartum hypertension. *Obstet Gynecol.* 2021;138:777-787. doi:10.1097/AOG.0000000000004574.