Predicting Postpartum Haemorrhage: A systematic review of prognostic models

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Abstract

Background: Postpartum Haemorrhage (PPH) remains a leading cause of maternal mortality and morbidity worldwide, and the rate is increasing. Using a reliable predictive model could identify those at risk, support management and treatment, and improve maternal outcomes. Objectives: To systematically identify and appraise existing prognostic models for PPH and ascertain suitability for clinical use. Search strategy: MEDLINE, CINAHL, Embase, and the Cochrane Library were searched using combinations of terms and synonyms including 'postpartum haemorrhage', 'prognostic model', and 'risk factors' that were developed from a scoping review. Selection Criteria: Observational or experimental studies describing a prognostic model for risk of PPH, published in English. Data Collection and Analysis: The Critical Appraisal and Data Extraction for Systematic Reviews of Prediction Modelling Studies checklist informed data extraction and Prediction Model Risk of Bias Assessment Tool guided analysis. Main Results: 16 studies met the inclusion criteria after screening 1612 records. All studies were hospital settings from 8 different countries. Models were developed for women who experienced vaginal birth (n=7), caesarean birth(n=2), any type of birth(n=2), hypertensive disorders(n=1) and those with placental abnormalities(n=4). All studies were at high risk of bias due to use of inappropriate analysis methods or omission of important statistical considerations or suboptimal validation. Conclusions: No existing prognostic models for PPH are ready for clinical application. Future research is needed to externally validate existing models and potentially develop a new model that is reliable and applicable to clinical practice. Funding: This study received no funding. Keywords: Postpartum haemorrhage, prognostic model, prediction tool.

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`Figure 1 PRISMA_2020_flow.docx` available at https://authorea.com/users/423370/articles/528816-predicting-postpartum-haemorrhage-a-systematic-review-of-prognostic-models