Nonreceipt of Newborn Vitamin K and Risk of Bleeding

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Importance: Refusal of newborn prophylactic vitamin K has been increasing in the US, placing more infants at risk for vitamin K deficiency bleeding.

Objective: To describe US trends in nonreceipt of newborn vitamin K and infant bleeding, and to compare risks of bleeding and mortality with concurrent bleeding among infants who did and did not receive newborn intramuscular (IM) vitamin K.

Design, setting, and participants: This retrospective cohort study included infants born at 35 to 43 weeks' gestation between January 1, 2017, and December 31, 2025, at hospitals and health systems from 50 states contributing to the Epic Cosmos dataset.

Exposure: Nonreceipt of newborn IM vitamin K.

Main outcomes and measures: The primary outcome was bleeding within the first 6 months of life based on International Statistical Classification of Diseases and Related Health Problems, Tenth Revision codes. Secondary outcomes were bleeding during the birth hospitalization and after discharge, intracranial bleeding, and mortality with concurrent bleeding during the birth hospitalization. Robust Poisson regression was used to estimate relative risks while adjusting for covariates.

Results: Among 5 240 780 infants, the rate of vitamin K nonreceipt increased from 3.1% in 2017 to 6.8% in 2025. Between 2017 and 2025, the incidence of bleeding by 6 months increased from 225.3 to 394.0 per 10 000 births in infants who did not receive newborn IM vitamin K, compared with 136.6 to 221.8 per 10 000 in infants who received vitamin K. Infants who did not receive vitamin K had significantly higher risk of bleeding by 6 months than infants who did receive vitamin K (288.0 vs 185.9 per 10 000; adjusted risk ratio [ARR], 1.47; 95% CI, 1.43-1.51). They also had higher risk of intracranial bleeding (33.0 vs 13.2 per 10 000; ARR, 2.43; 95% CI, 2.26-2.62) and mortality with concurrent bleeding during the birth hospitalization (2.9 vs 1.1 per 10 000; ARR, 2.69; 95% CI, 2.09-3.47).

Conclusions and relevance: Nonreceipt of vitamin K and infant bleeding incidence have increased in the US, and newborns who did not receive vitamin K were at significantly higher risk of bleeding during their first 6 months.

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