

Improving maternal outcomes through early recognition, rapid notification, and investigation of invasive GAS infection

The Comment by Asma Khalil and colleagues highlights the risk of invasive group A streptococcal (GAS) infections in postpartum women and neonates,¹ providing a salutary reminder for clinicians assessing these patients, particularly during periods of elevated GAS incidence. We write to highlight these infections.

Enhanced surveillance in England in 2009 identified 45 cases of invasive GAS infection associated with pregnancy and childbirth. 40 (89%) cases presented in the first 3 weeks after childbirth, representing a 91-times higher risk compared with age-matched non-pregnant women; in each of the first 3 days after childbirth, this elevation was 400 times higher than background rates (appendix). The cases included non-focal bacteraemia, septic arthritis, pneumonia, and lower limb necrotising fasciitis, alongside genital tract sepsis. The array of different presentations creates diagnostic challenges to early recognition because women can present to specialities where the importance of recent pregnancy or consideration of invasive GAS might be less recognised. Information on close contacts (only available for half of cases) identified three women with household contacts with probable non-invasive GAS infection, highlighting the value of inquiring about contacts when assessing women with signs of puerperal infection.

Updated community guidance in 2022 includes management of cases with severe clinical presentation consistent with invasive GAS infection, regardless of whether microbiological diagnosis from a

normally sterile site has been made.² It also expands the recommended groups of close contacts receiving antibiotic prophylaxis to encompass: women in late pregnancy or within 4 weeks of childbirth; neonates; children with recent chickenpox; and those older than 75 years. Where household clusters of invasive GAS occur, intervals are typically short (median of 2 days [IQR 0–7]), highlighting the importance of rapid notification of suspected invasive GAS cases to facilitate immediate contact follow-up.³ Given the potential for rapid clinical progression, urgent notification could be life-saving.

As a country with relatively high and rising rates of maternal mortality, and stark inequalities between ethnic groups, we must find opportunities to improve outcomes.⁴ Of the 45 maternal invasive GAS infections in 2009, 13 (29%) were admitted to intensive care, of whom two died. The importance of investigating nosocomial acquisition cannot be over-emphasised; one clonal *emm1* outbreak associated with simultaneous maternal deaths highlighted the importance of rapid intervention and led to the development of UK guidance on prevention of invasive GAS in hospital and maternity settings.^{5,6} Given this, and challenges in early recognition, all women reporting serious health concerns around the time of giving birth should be fully investigated with GAS considered as part of a differential diagnosis where relevant.

We declare no competing interests.

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- 1 Khalil A, Samara A, O'Brien P, Ladhani SN. Do not forget pregnant and post-partum women during group A streptococcal disease outbreaks. *Lancet Microbe* 2023; 4: e382–83.
- 2 UK Health Security Agency. Invasive group A streptococcal disease: managing close contacts in community settings, 2023. <https://www.gov.uk/government/publications/invasive-group-a-streptococcal-disease-managing-community-contacts> (accessed June 15, 2023).
- 3 Mearkle R, Saavedra-Campos M, Lamagni T, et al. Household transmission of invasive group A *Streptococcus* infections in England: a population-based study, 2009, 2011 to 2013. *Euro Surveill* 2017; 22: 30532.
- 4 Diguisto C, Saucedo M, Kallianidis A, et al. Maternal mortality in eight European countries with enhanced surveillance systems: descriptive population based study. *BMJ* 2022; 379: e070621.
- 5 Steer JA, Lamagni T, Healy B, et al. Guidelines for prevention and control of group A streptococcal infection in acute healthcare and maternity settings in the UK. *J Infect* 2012; 64: 1–18.
- 6 Turner CE, Dryden M, Holden MT, et al. Molecular analysis of an outbreak of lethal postpartum sepsis caused by *Streptococcus pyogenes*. *J Clin Microbiol* 2013; 51: 2089–95.



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