

Ms Kearsley
HM Coroner
Floors 2 and 3 Newgate
Rochdale
OL16 1AT

16 November 2023

Sent via email only

Dear Ms Kearsley,

Re: Sienna Barber – MFT comments on NICE’s PFD response.

Thank you for your giving Manchester University NHS Foundation Trust the opportunity to provide further information following receipt of the response received by NICE to the Prevention of Future Deaths report issued following the inquest into Sienna’s death.

My apologies for the delay in this response being provided. I confirm that I have considered NICE’s response and have set out my thoughts below.

Background

Group A streptococcus (GAS) is a Gram-positive bacterium commonly found as a commensal organism in the nose and pharynx of healthy individuals, particularly young children (up to 20% can be asymptomatic carriers). It can cause a variety of clinical conditions including tonsillitis, pneumonia, cellulitis, scarlet fever, necrotising fasciitis, and Streptococcal Toxic Shock Syndrome (STSS). The sequelae of GAS infections can be long lasting and include rheumatic fever, glomerulonephritis, and PANDAS. A Group A strep infection may become invasive (iGAS), leading to sepsis and death.

Group A strep and scarlet fever are notifiable diseases, meaning the UK Government and NHS England have confirmed they are diseases that ‘may present significant risk to human health’.

Management of suspected GAS infections poses a challenge, as the need to identify and treat potentially serious infection must be weighed up against the need for good antibiotic stewardship and prevention of antibiotic resistance. The UK currently has an issue with over-prescribing for sore throats despite NICE guidance on the management of sore throat.

History

A study published in 2020, in Archives of Disease in children stated 'Infections are still responsible for 1 in 5 childhood deaths in England and Wales... (and) The UK has one of the highest childhood death rates (from infection) in Europe'. (1)

The authors noted 'that Group A Streptococcus has emerged as a major pathogen... reflecting a sharp increase in disease incidence since 2014 and reaching 33.2 cases/100 000 person years by 2016, the highest rate for almost 50 years'. Increased risk of GAS infection is also associated with countries who do not vaccinate children against varicella, as in the UK. (1)

A comparison of mortality rates in UK children and young people compared to other EU countries showed 'the UK had the worst- to third worst mortality rank for common infection in both sexes and all age groups' (9)

While the UK public and NHS staff have an awareness of invasive meningococcal disease, there is no such awareness around GAS, despite it being more common and with higher mortality, than meningococcus.

Data from autumn 2022 covering a ten-week period showed 102 notified cases of invasive meningococcal disease, with a case fatality ratio of 6%; over the same period 520 cases of invasive Group A strep were notified, with a case fatality ratio of 13.6%. Since 2017, the incidence of scarlet fever and iGAS has increased above seasonal variation, with 2022-2023 seeing increased mortality in children under 10 (8).

Current guidance

There is no easily identified source of guidance on diagnosis and management of the different clinical presentations of GAS, and there is no single resource for best practice management of mild or serious infections in the UK.

Due to rapidly increasing rates of GAS infections in children at the end of 2022, NHS England (NHSE) published interim clinical guidance in Dec 2022 on the diagnosis and treatment of children with sore throat. Various clinical scoring systems exist for assessing the probability of a sore throat being bacterial. NHSE temporarily reduced the clinical score required for prescription of antibiotics for sore throat, overriding the current NICE sore throat guidelines, however this was reversed in early 2023.

NICE GAS guidelines are focused on the management of an outbreak and chemoprophylaxis, rather than treatment of the individual patient. In the absence of formal clinical guidelines, when GAS cases began to rise in late 2022, additional guidance and learning modules were published by RCPCH, RCEM, UKHSA and NHS England (2, 6, 7). However much of this material was directed at patients and families rather than clinicians.

Certain treatments for GAS are associated with increased survival rates if implemented early but are not widely known. For example, the addition of clindamycin

(12) to broad spectrum antibiotics may improve mortality, and IVIG can be administered for STSS (13). However, this information is difficult to source outside specialised clinical teams, and is not common knowledge among clinicians, leading to delays or missed treatments in a disease that requires time critical identification and treatment.

The only guidance for UK clinicians for managing an infection in an individual is CKS and UKHSA guidance for scarlet fever (3, 4); the CKS guidance was outdated at the time of the surge in cases. There is no easily accessible guidance that summarises the different presentations of GAS; unlike in other developed countries, including Scotland, who have easily accessible advice for clinicians (10, 11, 14). The USA Center for Disease Control (CDC) has a dedicated website for clinicians, covering the range of possible GAS presentations, diagnosis, and management.

Rapid antigen testing

5-30% of sore throats are likely to be GAS, but it is very difficult to clinically differentiate these from viral pharyngitis. Rapid antigen detection testing (RADT) is a bedside test which detects the presence of GAS from a throat swab within a few minutes. Developed countries have differed in their adoption of this test. Countries such as the UK, Netherlands, and Belgium do not currently use routine testing, although it is carried out in some centres. Other countries such as the USA, Finland, and France, advocate testing for suspected GAS disease.

The decision to adopt rapid antigen testing is complicated by asymptomatic carriage in children, sensitivity and specificity of the test and the need for clear guidance on appropriate patient cohort for testing. A review by NICE in 2019 failed to show a definite benefit for use in sore throat, however this review was based on whole population assessment of patients over 5 years, which included low risk parts of the population.

Patients at higher risk of invasive GAS include children under 10 years, mothers and babies in the first 28 days after birth, and patients over 75 years. Other groups who may be at higher risk include alcoholic patients, children with varicella, obese patients and immunocompromised patients. Review of benefit versus cost for the highest risk populations, in context of UK child mortality and the role GAS plays, would establish whether the cost benefit ratio was altered.

Given the rate of asymptomatic carriage of GAS, there is a concern that RADT will result in an increase in antibiotic prescribing. However, it is acknowledged that there is currently significant over-prescribing of antibiotics for sore throats in both primary and secondary care. Evidence from the USA has shown that use of a RADT in conjunction with clinical scoring systems can actually reduce inappropriate antibiotic prescribing.

Some NHS Trusts have already introduced GAS RADT and these include Alder Hey Children's Hospital in Liverpool, Derby Hospital and Northwick Park, Harrow.

Conclusion

MFT are concerned at the need for better clinician awareness and understanding of the ways in which GAS can present, and its optimal management. We have liaised with Greater Manchester Sudden Unexpected Death of a Child team, Public Health England, and Greater Manchester Child Death Overview Panel to raise our concerns. Given the incidence of iGAS is five times that of meningococcal disease, the case fatality ratio is double, the incidence is increasing year on year (other than during lockdown), and the wide variety of ways it can present, there is a need for comprehensive, nationwide guidance for clinicians on the condition.

NICE has produced comprehensive guidance on recognition and management of meningococcal disease since 2010. This guidance includes the symptoms and signs, diagnosis and management of acute and long-term presentations, as well as recommendations for further research. We recommend the development of similar guidelines for GAS.

Any national guideline should include a section on RADT, with recommendations for research. This should include consideration of targeted testing of high-risk populations, and use of rapid antigen testing during an outbreak.

I hope this response is helpful, please do not hesitate to contact us for any further information and/ or clarification.

Yours Sincerely



Paediatric ED Consultant



Patient Safety Manager – Risk Team