BASHH position statement on doxycycline use in pregnancy

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**Background:**

Doxycycline is a broad-spectrum antibiotic and effective for the treatment of several infections; however, due to adverse effects of older tetracyclines in pregnancy, its use is contraindicated during all trimesters of pregnancy.

Tetracycline binds to calcium orthophosphate and is actively and irreversibly deposited in teeth and bones. When a foetus is exposed to tetracycline in utero, deposition in teeth is permanent and can cause staining which may darken with time, affecting deciduous teeth only. Deposition in bones is suggested to be reversible with rapid compensatory bone growth.

Doxycycline binds less to calcium than tetracycline and has been shown not to cause the same tooth staining.1 Studies also show a lack of staining with doxycycline to permanent teeth when given to children under 8 years.2

In other situations, doxycycline has been used safely in early pregnancy, for example, current UK guidance3 for malaria prevention in pregnancy states: ‘where other options for malaria prevention are unsuitable, doxycycline can be used if the full course (including the 4 weeks after travel) can be completed before 15 weeks gestation’.

**BASHH recommendation:**

While doxycycline appears to be safe when used in the first trimester of pregnancy, it is accepted that data are limited. We therefore suggest that a suitable alternative treatment to doxycycline be used during all stages of pregnancy. Where this does not exist, we recommend doxycycline can be considered if the full treatment course can be completed prior to 15 weeks’ gestation. Where doxycycline is used in early pregnancy, outcome and follow up data should be collected to aid future practice. Healthcare professionals can contact UKTIS on 0344 892 0909 to prospectively report exposed pregnancies and UKTIS will ensure follow up.

References:

1. Cross R, Ling C, Day NP, McGready R, Paris DH. Revisiting doxycycline in pregnancy and early childhood--time to rebuild its reputation? Expert Opin Drug Saf. 2016;15(3):367-82. Accessed 28/02/2024 [Revisiting doxycycline in pregnancy and early childhood – time to rebuild its reputation? - PMC (nih.gov)](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4898140/)
2. Todd, SR; Dahlgren, FS; Traeger, MS *et al*. ‘No Visible Dental Staining in Children Treated with Doxycycline for Suspected Rocky Mountain Spotted Fever’. The Journal of Pediatrics. Vol 166, No 5. May 2015 p1246-1251. Accessed 01/02/2024 [No Visible Dental Staining in Children Treated with Doxycycline for Suspected Rocky Mountain Spotted Fever (jpeds.com)](https://www.jpeds.com/article/S0022-3476%2815%2900135-3/pdf?ext=.pdf)
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