GENTAMICIN IN PREGNANCY – A LITERATURE REVIEW

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INTRODUCTION

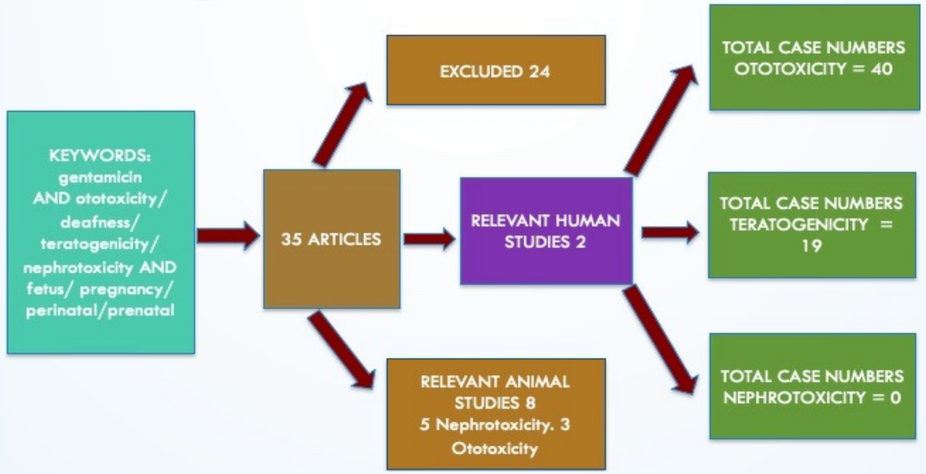
Gentamicin is commonly used as a first line antibiotic for infections in pregnancy. It is listed as a TGA Category D, with recognised transplacental transfer. It has been linked to side effects of nephrotoxicity and ototoxicity in individuals undertaking treatment. A Cochrane review into outcomes of neonates treated with Gentamicin, although did not demonstrate harm, was significantly under powered with small case numbers[8]. Do we acknowledge the risk we are posing to our pregnant population?

OBJECTIVES

To investigate the level of evidence currently available for safety of gentamicin use in pregnancy, via a literature search

METHODS

A literature search was conducted using databases PubMed, Medline, Embase and Cochrane library. Key words included gentamicin, ototoxicity, deafness, teratogenicity, nephrotoxicity, fetus, pregnancy and perinatal. 35 articles were viewed. 23 were excluded due lacking relevance for this analysis. 2 relevant human and 8 animal studies were identified. 5 animal studies addressing nephrotoxicity and 3 regarding ototoxicity were identified.



RESULTS

Animal studies suggested possible harm. Evidence is demonstrated both on histopathological and biochemical analysis. Limited human studies did not suggest harm. A single centre cohort study from 2002-2006 in Canada followed 40 cases with prenatal gentamicin use[5]. Indication for treatment included pyelonephritis (48%) and chorioamnionitis (31%). Cumulative dose was 764 +- 600 mg. All infants passed hearing tests, 89% on initial screening. A Hungarian Case-Control survey from 1980-1996 surveyed 38151 newborns without defects and 22865 with congenital abnormalities, with an aim to explore teratogenicity of different agents[3]. 37 case and 42 control were treated with aminoglycosides. 19 case and 19 control were treated with gentamicin. Comparing groups treated with and without aminoglycosides gave an OD ratio of 1.5 (P-value = 0.0874, 95% CI 0.95–2.29). Gentamicin use comparison showed an OD ratio of 1.7 (95% CI 0.9 – 3.2). No statistical significant difference was identified between the groups.

CONCLUSION

Literature is significantly lacking regarding the safety of perinatal gentamicin. Only two relevant human studies provide evidence of safety, with minimal case number. Practitioners should practice greater reflection of the necessity of its use.

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