Treatment of Intestinal Protozoa in Pregnancy: A Systematic Review of Maternal, Fetal and Infant Outcomes

Saniya Mansuri[1], Rachel Lau[2], Swana Kopalakrishnan[1], Celine Lecce[1], Robert Chris[1], Aisha Khatib[1], Sharmistha Mishra[3,4], Andrea K Boggild[1,2,4]

[1]Tropical Disease Unit, Toronto General Hospital, Toronto, ON, Canada, [2]Public Health Ontario Laboratories, Toronto, ON, Canada, [3]LI Ka Shing Knowledge Institute, St. Michael's Hospital, Toronto, ON, Canada, [4]Department of Medicine University of Toronto, Toronto, Ontario, Canada[4]

Background:

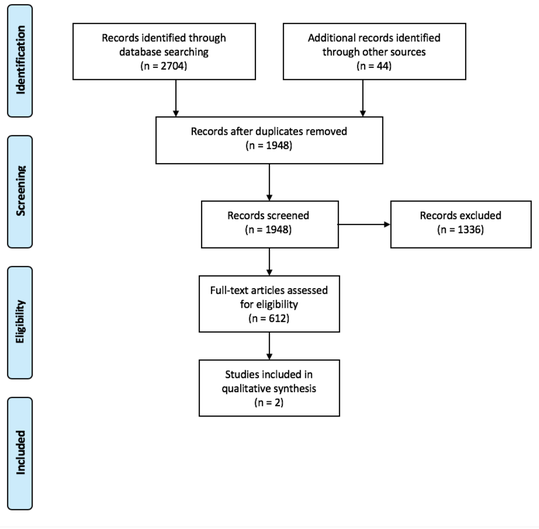
- Parasitic infections in pregnancy necessitate consideration of numerous factors including the potential safety, efficacy developmental outcomes for the mother and baby
- A substantial knowledge gap exists in the treatment of intestinal protozoa infections during pregnancy
- We systematically assessed the current literature regarding the treatment of intestinal protozoa with metronidazole on the safety, efficacy and developmental outcomes for the mother and baby

Methods:

- A literature search was conducted on Medline, EMBASE, CINAHL, Cochrane Library of Systematic Reviews and CENTRAL databases from database inception to June, 2019
- Duplicate articles were removed and title, abstract and full-text articles were systematically double screened and arbitrated by a third reviewer
- Inclusion criteria were as follows: 1) Metronidazole treatment during pregnancy; 2) Diagnosis of intestinal protozoa during pregnancy ; 3) Maternal, fetal, or child outcome post drug treatment in pregnant women
- Data were extracted from articles by two reviewers
- Data were summarized using qualitative measures

Results:

Figure 1. PRISMA Flow Diagram



Results:

- Treatment of *Entamoeba histolytica* with metronidazole during pregnancy cleared the infection in mothers and had no adverse effects on live births
- Limited number of case report studies on intestinal protozoa during pregnancy were available for our review.
- No studies on treatment of giardiasis or dientamoebiasis during pregnancy were available

Table 2. Data Synthesis Table

Study	Study Period	Study Population	Study Design	Trimester of Drug Treatment	Drug Treatment	Treatment and Sample Size	Intestinal Protozoa Identified	Maternal Outcomes	Fetal Outcomes
Masuda, G 1986	Not stated	1: pregnant woman in first trimester (15 weeks), 30 year old	Case report: N =1	1st	metronidazole	N = 1 ; 1: metronidazole (2g) for 10 days	E. histolytica	Infection cleared	Live birth
Read, KM 2001	Not stated	Pregnant woman in third trimester (31 weeks), 37 years old,	Case report: 1 pregnant female	3rd	Pre labour: Metronidazole + Ceftriaxione, Metronidazole + diloxanide furoate	N=1 Pre labour: Metronidazole and IV Ceftriaxione Post labour: 14 day course of metronidazole + 10 day course of diloxanide furoate	E. Histolytica from serologic tests	Premature labour (32 weeks gestation) Complete resolution of liver abscess	Live birth, normal birth weight

Conclusion:

- Treatment of *Entamoeba histolytica* with metronidazole during pregnancy does not result in negative maternal or fetal outcomes
- Early diagnosis and treatment with metronidazole is encouraged
- Data on the use of metronidazole in pregnancy for the indication of protozoal infections are scant

References:

Masuda, G., M. Negishi, C. Young, N. Shimizu, M. Kitamura, G. Kosaki, K. Kawaguchi and M. Koike (1986). "[A report on amoebiasis as an opportunistic infection]." Kansenshogaku Mitchell, R. W. and A. J. Read, K. M., S. Kennedy-Andrews and D. L. Gordon (2001). "Amoebic liver abscess in pregnancy." *Australian & New Zealand Journal of Obstetrics & Gynaecology* 41(2): 236-237.

Contact:

Dr. Andrea K. Boggild
E-mail: andrea.boggild@utoronto.ca
: @BoggildLab
Website: www.boggildlab.ca