Q&A 202.3

How should threadworms be treated during pregnancy?

Prepared by UK Medicines Information (UKMi) pharmacists for NHS healthcare professionals
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Background

Infestation with threadworms (also known as pinworms or *Enterobius vermicularis*) occurs as a result of ingestion of the eggs, which then hatch in the intestine. Eggs are laid by the female worm in the perianal area, usually at night (1,2). This can cause intense itching with subsequent transfer by hand to the mouth, which continues the cycle. The lifespan of an adult threadworm, which is a parasite, is approximately six weeks (1).

Due to the high risk of transmission and reinfestation, all members of the household should be treated with an anthelmintic and follow hygiene measures at the same time (1). This recommendation often causes concern to a pregnant woman, particularly if she is not infected herself (2).

General information about prescribing in pregnancy can be found here. If you are not familiar with this information, you are advised to review it before reading further.

Answer

Hygiene measures

Threadworm infestation can be eradicated with meticulous attention to hygiene (2,3) and this, combined with physical removal of the eggs, is considered to be first line management for pregnant women (1,2,3).

Strict hygiene measures, together with physical removal of the eggs (e.g. with 'wet wipes'), should be adopted for at least six weeks to break the cycle of re-infection (1). These include washing hands and scrubbing nails after visiting the toilet and before each meal, bathing or showering every morning to remove any eggs laid at night, and changing bed linen frequently (1,3).

However, whilst threadworms are harmless and the condition is not life-threatening (4) drug treatment may be considered, if rigorous hygiene measures have been unsuccessful, provided the woman is not in the first trimester of pregnancy (1,2).

Mebendazole

For the control of threadworms a single 100mg dose of mebendazole should be administered but a second 100mg dose is recommended after two weeks, if re-infection is suspected (5). There are limited published data on the use of mebendazole during pregnancy; such use is contra-indicated by the manufacturer (5). However, it is poorly absorbed from the gastrointestinal tract in humans (6) suggesting that limited amounts enter the maternal circulation.

There are individual unpublished case reports of both poor outcomes and healthy births following exposure to mebendazole (6), but formal studies with multiple exposures are described below.

In a US surveillance study, 64 infants were exposed to mebendazole during the first trimester. Four (6.3%) major birth defects were seen (three expected), including one limb reduction defect (none expected) (7).

In a retrospective case-control study in Sri Lanka, 5275 pregnant women received mebendazole (93% took 100mg twice daily for 3 days – a dose higher than the UK dose for threadworm). 2.5% of the 407

women taking mebendazole in the first trimester experienced major congenital defects compared to 1.5% of the control group, but this was not statistically significant (odds ratio 1.66 [95% CI 0.81-3.56], p=0.23). The overall data suggest that mebendazole therapy is not associated with a statistically significant increase in the risk of major congenital defects at any stage of pregnancy. However, the authors note that an increase in relative risk (RR) of up to two-fold cannot be ruled out (8).

A prospective study followed 192 women exposed to mebendazole during pregnancy, mostly during the first trimester (71.5%). All were exposed to between one and three doses of mebendazole 100mg. The rate of major anomalies following exposure to mebendazole compared with the control group was 5/150 (3.3%) versus 3/175 (1.7%). This difference was not statistically significant (p=0.478; RR 1.94 [95% CI 0.47-8.00]), although these wide confidence intervals should be noted. The number of ectopic pregnancies, miscarriages, or stillbirths did not differ significantly (4).

The authors of one retrospective case-control study, concluded that mebendazole did not present an increased teratogenic or fetotoxic risk during pregnancy. However there were a limited number of cases and controls exposed to mebendazole in this study (14 in each group) (9).

In a more recent randomised, double-blind, placebo-controlled study (n=1042), mebendazole was given as a 500mg single dose to 522 women in their second trimester for hookworm (22 treated patients were lost to follow-up). Both groups also received iron supplements. There was no statistically significant difference in adverse birth outcomes (5.6% vs 6.25%) or malformations (1.4% vs 1.61%) compared with placebo (10).

If hygiene measures are ineffective in controlling threadworm infestation then mebendazole is considered appropriate for use. Treatment should be delayed until after the first trimester of pregnancy if possible. The available data do not suggest that mebendazole causes a significantly increased risk of malformations, although this cannot be excluded. The United Kingdom Teratology Information Service (UKTIS) advises that inadvertent exposure to mebendazole at any stage of pregnancy would not usually be regarded as medical grounds for termination of pregnancy or any additional fetal monitoring (6).

Summary

- The first line management for pregnant women with threadworms is strict hygiene measures, together with physical removal of the eggs e.g. by local cleansing (1,2,3).
- There is little published information available on the use of mebendazole in pregnancy. If hygiene measures are ineffective in controlling threadworm infestation then mebendazole is considered appropriate for use (6). However, ideally, it should not be used during the first trimester of pregnancy for the management of threadworms (1,2). Mebendazole is contra-indicated by the manufacturer throughout pregnancy (5).
- If drug treatment is considered necessary, the available data do not suggest that mebendazole increases the risk of malformations (2).
- Inadvertent exposure to mebendazole at any stage of pregnancy would not usually be regarded as medical grounds for termination of pregnancy or any additional fetal monitoring (6).
- Pripsen sachets (containing piperazine phosphate 4g plus standardised senna 15.3mg), which were previously available for the eradication of threadworms, were discontinued in 2013 (11).

Limitations

- Limited published data are available on the safety of mebendazole in pregnancy.
- Unpublished data have not been included.
- This Medicines Q&A has addressed the management of threadworms during pregnancy. The use of mebendazole for the management of other conditions during pregnancy, where the risk:benefit ratio may differ, is beyond the scope of this Q&A.

References

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Search strategy

- Medline via NICE Evidence Search:

exp PREGNANCY/ AND exp MEBENDAZOLE/ (Limits: LG=EN)
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exp PREGNANCY COMPLICATIONS/ AND exp MEBENDAZOLE/ AND exp ENTEROBIUS/ (Limits:LG=EN)
exp PREGNANCY/ AND pinworm*.af AND exp MEBENDAZOLE/ (Limits:LG=EN)
exp PREGNANCY/ AND exp MEBENDAZOLE/ AND threadworm*.af

- Embase via NICE Evidence Search:

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exp PREGNANCY/ AND exp MEBENDAZOLE/ AND pinworm*.af (Limits:LG=EN)
exp PREGNANCY/ AND exp MEBENDAZOLE/ AND threadworm*.af

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- NICE Evidence Search. Accessed via https://www.evidence.nhs.uk/
- BNF. Accessed via www.bnf.org
- Personal communication with Janssen-Cilag Ltd via email on 2nd July 2013

- Personal communication with Thornton and Ross Medical Information via telephone 4th July 2013
  - In-house textbooks