Interventions for tubal ectopic pregnancy

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Laparoscopic surgery and systemic methotrexate are the two best options for the treatment of a non-complicated tubal pregnancy. For the treatment of very early stages of ectopic pregnancy, systemic methotrexate is preferred over laparoscopic surgery for its simplicity and low cost.

RHL Commentary by Mignini L

1. EVIDENCE SUMMARY

In this review (1) on the treatment of tubal ectopic pregnancy, 35 studies have been analysed with 25 different comparisons. Although, all adequately controlled trials that could be identified have been included and appropriately analysed, the overall methodological quality of the studies included was considered suboptimal, largely due to the lack of detailed information on allocation and randomization in more than half of the studies. These comparisons have been grouped into three categories (surgery, medical treatment and expectant management).

This review concludes that laparoscopic surgery is feasible and less expensive than open surgery for the treatment of tubal ectopic pregnancy. Systemic methotrexate is an alternative nonsurgical treatment option, if the diagnosis of tubal ectopic pregnancy is established non-invasively, thereby offering a complete non-invasive outpatient management. Systemic methotrexate can be recommended only for haemodynamically stable women with an unruptured tubal ectopic pregnancy and no signs of active bleeding presenting with low initial serum human chorionic gonadotropin (hCG) concentrations.

Although most patients indicated a preference for systemic methotrexate because of it being a non-invasive management strategy, health-related quality of life was more severely impaired after methotrexate as compared to laparoscopic surgery. Both subsequent intrauterine gestation and repeat ectopic pregnancy rates were similar (2).

The single study comparing systemic methotrexate and expectant management (no intervention – only monitoring to see if tubal gestation regresses) was not informative from a clinical viewpoint.

2. RELEVANCE TO UNDER-RESOURCED SETTINGS

2.1. Magnitude of the problem

Ectopic pregnancy is a leading cause of pregnancy-related death in early pregnancy (3, 4). Fortunately, after
the advent of transvaginal ultrasonography and beta subunit of hCG (beta-hCG) tests, the incidence rates of rupture of fallopian tubes and case-fatality rates declined (4). In developing countries, a majority of hospital-based studies have reported ectopic pregnancy case-fatality rates of around 1%–3%, 10 times higher than those reported in developed countries (5). Late diagnosis, leading in almost all cases to major complications and emergency surgical intervention, is the key factor accounting for such high fatality rates in women suffering from ectopic pregnancy in developing countries. However, transvaginal ultrasonography and beta-hCG tests are rarely available in public health institutions in developing countries. Hence, ectopic pregnancy continues to be a life-threatening and sometimes fatal condition, whose treatment frequently requires an emergency intervention often including salpingectomy.

2.2. Applicability of the results

All but one of the trials reviewed were conducted in developed countries. There are no biological reasons to expect different results in developing countries. However, the early diagnosis of unruptured ectopic pregnancy is much less common in developing-country settings.

2.3. Implementation of the intervention

The feasibility of implementing various interventions for tubal pregnancy can be considered from several aspects: medical success, costs, availability of equipment and trained health-care personnel. Laparoscopic surgery and systemic methotrexate are the two best options for the treatment of a non-complicated ectopic pregnancy. For the treatment of very early stages of ectopic pregnancy, systemic methotrexate should be preferred for its simplicity and low cost; in all other cases laparoscopic surgery should be used. Implementation of these interventions will require the availability of the abovementioned diagnostic and therapeutic facilities and appropriately trained health-care personnel. In centres that do not have facilities for performing the beta-hCG test, transvaginal diagnostic ultrasound, and operative laparoscopy, the minimally invasive techniques cannot be introduced. In such under-resourced centres emphasis should be placed on timely intervention and provision of adequate blood transfusion services.

3. RESEARCH

In developing-country settings, strategies need to be developed and tested to achieve early diagnosis of ectopic pregnancy and transport of affected women to a centre with operative facilities, with a view to reducing maternal mortality from ectopic pregnancy. Specific research is needed to determine whether the introduction of sensitive urine hCG tests, which have become relatively inexpensive in recent years, is effective in improving the accuracy of differentiation between ectopic pregnancy and pelvic inflammatory disease.

Regarding the questions addressed in the Cochrane review, several issues should be considered in randomized controlled trials:

- side-effects;
- the effect of a single methotrexate injection versus oral methotrexate on elimination of tubal pregnancy;
- the effect of a single methotrexate injection versus laparoscopic salpingostomy on elimination of tubal pregnancy;
- health-related quality of life, recurrent ectopic pregnancies, future intrauterine pregnancies; and
- the effect on costs (including subsequent interventions for persistence of trophoblastic tissue) of laparoscopic salpingostomy versus salpingectomy.

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**References**


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