Magnesium in pregnancy

Evidence for dietary supplementation is unconvincing

Nutritional deficiencies are common in pregnancy, but many pregnant women are taking unnecessary supplements of vitamins and minerals because they fail to understand the normal physiological and biochemical variations of pregnancy. Thus after decades of study we are still unsure whether well nourished women need to take haematinics during pregnancy. Recently more attention has been paid to the importance of zinc[1] and magnesium[2-4] in pregnancy, and we must examine carefully claims of benefit from supplementing the diet of pregnant women with these minerals.

Reproductive problems are well known to arise in animals because of deficiencies in trace elements, but such problems are less well described in humans—except in relation to inborn and other errors of metabolism. In the early 1980s zinc became the fashionable trace element, and zinc supplementation during pregnancy has had its advocates. This philosophy has, however, been strongly criticised from first principles and from a review of published work,[1] and there is little place for zinc supplementation.

Although magnesium is not a trace element (being the fourth commonest cation in the human body), it acts in similar ways to many of the trace elements, and over 300 enzymatic reactions are claimed to be dependent on it.[5] Sheldon *et al* studied magnesium concentrations during human pregnancy and showed the pattern commonly seen for other substances—a steady fall in plasma concentrations during pregnancy and a rapid return to prepregnancy concentrations after delivery.[4]

In a retrospective study magnesium supplementation was associated with a reduced frequency of fetal growth retardation and pre-eclampsia.[2] These findings were not confirmed in a prospective double blind study of 568 women.[3] The prospective study did, however, show significant reductions in the need for hospital admission for antepartum haemorrhage (4/278 with supplementation, 17/290 with placebo), threatened preterm labour (12/278 *v* 26/290), and incompetent cervix (8/278 *v* 17/290). The surprisingly high incidence (at least by British standards) of cervical incompetence in both groups was not explained, neither was it explained how magnesium might reduce the incidence. Although neonatal admission to intensive care was significantly higher in the group given placebo, none of the specific indications for admission was significantly higher. A significant reduction in preterm delivery was found only after the code was broken and those who did not comply had been excluded. These disparate clinical observations clearly need to be reconciled.

There is no convincing evidence of magnesium deficiency occurring in humans except in pathological states,[6] and in the studies undertaken during pregnancy magnesium concentrations were not measured. When magnesium intake is low renal conservation is very effective—with daily urine loss of about 0·5 mmol (12 mg). This amount of magnesium is contained, for example, in about 15 g cereal, 45 g meat, or 70 g vegetables.[7] Modest supplementation probably does no harm, but intoxication with magnesium may occur when it is given therapeutically in managing eclampsia. Not only is the mother affected but also the baby may show hypotonia and reduced activity. The routine supplementation of the diet of pregnant women with magnesium is thus not to be recommended.

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Women and HIV

They need information to make informed choices on pregnancy and childbirth

In Western society women make up only a small proportion of those infected with HIV and an even smaller proportion of those with AIDS. In the United Kingdom by the end of October 1988 some 50 women had been reported as having AIDS, less than 3% of the total. Of these, 13 had received contaminated blood products, 10 were intravenous drug users, and 27 had probably been infected through sexual intercourse with men in recognised risk groups.[1,2] Because there are so few women infected with HIV they have found it difficult to organise groups for mutual support or effective lobbying. The pattern is, however, changing. Increasing numbers of women are becoming infected with HIV because of its spread among intravenous drug users and their sexual partners, many of whom are women.

Most women are uninfected but many now seek counselling. Of course drug users should not share needles, but they can be reassured that most are unlikely to become infected with HIV sexually. Nevertheless, they should avoid intercourse with a partner who might have been at risk until an informed choice can be made. An uninfected woman who has a well grounded fear that a male partner has HIV infection must consider carefully whether to have penetrative intercourse; she should at least abstain from anal intercourse and always use condoms.

Like their male counterparts many HIV infected women abstain altogether from sexual intercourse. Those who continue and decide not to become pregnant may need two preventive measures: a condom to prevent transmission of HIV (and other organisms) and a further, more efficient, contraceptive. For preventing infection the condom is the mainstay[3]; its use, however, requires the cooperation of the male partner, who may be unreliable. Other barrier methods have not been investigated, but diaphragms may help to