

Does dietary supplementation with antenatal myo-inositol prevent gestational diabetes?

Clinical Question

Is dietary supplementation with myo-inositol safe and effective for the mother and foetus, in preventing gestational diabetes?

Bottom Line

Antenatal supplementation with myo-inositol for the prevention of gestational diabetes is a comparatively new treatment. Whilst the results of this review show that myo-inositol has promise in preventing the onset of gestational diabetes, there is currently insufficient evidence to support its routine adoption. Supplementation with myo-inositol may also result in a large reduction in hypertensive disorders of pregnancy but little to no difference in the risk of caesarean section. For infants, the evidence is also very uncertain about the effect of myo-inositol on the risk of a large-for-gestational-age infant or neonatal hypoglycaemia, but myo-inositol may be associated with a reduction in the incidence of preterm birth.

Caveat

The applicability of this evidence is limited as six of the studies were conducted in Italy and only one was conducted elsewhere, in Ireland, and participants were predominantly white women. Further studies in diverse settings, including participants of different ethnicities and varying risk factors, would improve the applicability of the evidence. The current trials did not report on postnatal depression, development of subsequent type 2 diabetes mellitus, perinatal mortality or serious neonatal outcomes. The lack of blinding in most of the included studies has also resulted in lower confidence in these results.

Context

Gestational diabetes with onset or first recognition during pregnancy is an increasing problem worldwide. Myo-inositol, an isomer of inositol, is a naturally occurring sugar commonly found in cereals, corn, legumes and meat. Myo-inositol is one of the intracellular mediators of the insulin signal and correlates with insulin sensitivity in type 2 diabetes. The potential beneficial effect of improving insulin sensitivity suggests that myo-inositol may be useful for women in preventing gestational diabetes.

Cochrane Systematic Review

Motuhifonua SK, Lin L, Alsweller J, Crawford TJ, Crowther CA. Antenatal dietary supplementation with myo-inositol for preventing gestational diabetes. Cochrane Database of Systematic Reviews 2023, Issue 2. Art. No.: CD011507. DOI: 10.1002/14651858.CD011507.pub3. This review contains 7 trials with a total of 1319 participants.

Pearls No. 718, February 2023, written by Assoc Professor Vanessa MB Jordan.

Systematic review link:

<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD011507.pub3/full>