



CATALYST

Cochrane Review Series

Cochrane review series: Showell MG, Mackenzie-Proctor R, Jordan V, Hodgson R, Farquhar C. Inositol for subfertile women with polycystic ovary syndrome. Cochrane Database Syst Rev. 2018: CD012378

Question: Should we advise oral Inositol supplement in subfertile women with PCOS prior to infertility treatment?

Focus:

Oral Inositol supplementation versus no supplementation or folic acid supplementation prior to treatment for infertility.¹

Population of interest:

Subfertile women with PCOS undergoing ovulation induction or IVF. The majority of the trials included women planned for IVF, while few included women planned for ovulation induction.

Intervention under investigation:

Oral Inositol supplementation prior to infertility treatment. Most of the studies included pretreatment for up to 8-12 weeks prior to IVF.

What was the comparison?

No supplementation or standard supplementation (periconceptual Folic acid).

What were the main outcomes?

Live birth, clinical pregnancy and miscarriage rate.

Results in short:

- ◆ **Eleven trials** included **1472** subfertile women with PCOS. Out of eleven trials, **nine** involved PCOS women undergoing IVF.
- ◆ **Live birth rate: No difference in live birth rate with supplementation of oral Inositol** vs. no supplementation in women undergoing IVF (OR 2.42, 95% CI 0.75 to 7.83; P = 0.14; 2 RCTs; 84 women; very low-quality evidence).
- ◆ **Clinical pregnancy rate: No difference in clinical pregnancy rates with supplementation of oral Inositol** vs. supplementation in women undergoing IVF (OR 1.27, 95% CI 0.87 to 1.85; P = 0.22; 4 RCTs; 535 women; very low-quality evidence).
- ◆ **Miscarriage rate: Significantly higher miscarriage rate with supplementation of oral inositol** vs. no supplementation in women undergoing IVF (OR 0.40, 95% CI 0.19 to 0.86; P = 0.02; 4 RCTs; 535 women; I² = 66%; very low-quality evidence).

Limitation:

- ◆ No pooled evidence was available for women with PCOS undergoing ovulation induction, as only single trials, performed comparing of Inositol versus Clomiphene citrate or oral insulin sensitising agents, were included.
- ◆ There was clinical heterogeneity in pooled analysis due to variation in the dose and duration of supplementation of Inositol for IVF pretreatment. Most of trials used Myoinositol and doses varied from 550-4000 mgs and duration of supplementation varied from "first day of cycle to embryo transfer" or upto six months prior to IVF.
- ◆ The controlled ovarian hyperstimulation protocols (antagonist vs. agonist) used in the trials were not reported.
- ◆ None of the trials in the IVF pre-treatment group, nor in the ovulation induction group reported on side effects related to myo-inositol.

Evidence based practice points:

- ◆ **Currently, there is uncertainty regarding role of routine Inositol supplementation in PCOS women undergoing IVF with no difference being found in live birth or clinical pregnancy rates following Inositol supplementation versus no supplementation.** Further, due to changing clinical practice towards more liberal use of "freeze all" policy in PCOS women at high risk of OHSS, there may increased uncertainty about role of Inositol supplementation before IVF.
- ◆ **There is also insufficient evidence for Inositol supplementation in PCOS women undergoing ovulation induction due to paucity of trials.**
- ◆ **Further clarity on the role of Inositol would be possible only after high quality randomized trials evaluating its role in PCOS women for ovulation induction and IVF are available.**

Reference:

1. Showell MG, Mackenzie-Proctor R, Jordan V, Hodgson R, Farquhar C. Inositol for subfertile women with polycystic ovary syndrome. Cochrane Database Syst Rev. 2018, Issue 12: CD012378.



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