Association between thyroid autoantibodies and miscarriage and preterm birth meta-analysis of evidence.

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Abstract

OBJECTIVES: To evaluate the association between thyroid autoantibodies and miscarriage and preterm birth in with normal thyroid function. To assess the effect of treatment with levothyroxine on pregnancy outcomes in this g women.

DESIGN: Systematic review and meta-analysis.

DATA SOURCES: Medline, Embase, Cochrane Library, and SCISEARCH (inception-2011) without any language restrictions. We used a combination of key words to generate two subsets of citations, one indexing thyroid autoantibodies and the other indexing the outcomes of miscarriage and preterm birth.

STUDY SELECTION: Studies that evaluated the association between thyroid autoantibodies and pregnancy outc were selected in a two stage process. Two reviewers selected studies that met the predefined and explicit criteria regarding population, tests, and outcomes.

DATA SYNTHESIS: Odds ratios from individual studies were pooled separately for cohort and case-control studi the random effects model.

RESULTS: 30 articles with 31 studies (19 cohort and 12 case-control) involving 12,126 women assessed the ass between thyroid autoantibodies and miscarriage. Five studies with 12,566 women evaluated the association with birth. Of the 31 studies evaluating miscarriage, 28 showed a positive association between thyroid autoantibodies miscarriage. Meta-analysis of the cohort studies showed more than tripling in the odds of miscarriage with the pre of thyroid autoantibodies (odds ratio 3.90, 95% confidence interval 2.48 to 6.12; P < 0.001). For case-control stud odds ratio for miscarriage was 1.80, 1.25 to 2.60; P = 0.002). There was a significant doubling in the odds of pret with the presence of thyroid autoantibodies (2.07, 1.17 to 3.68; P = 0.01). Two randomised studies evaluated the treatment with levothyroxine on miscarriage. Both showed a fall in miscarriage rates, and meta-analysis showed a significant 52% relative risk reduction in miscarriages with levothyroxine (relative risk 0.48, 0.25 to 0.92; P=0.03). study reported on the effect of levothyroxine on the rate of preterm birth, and noted a 69% relative risk reduction (0.11 to 0.90).

CONCLUSION: The presence of maternal thyroid autoantibodies is strongly associated with miscarriage and pret delivery. There is evidence that treatment with levothyroxine can attenuate the risks.