

# Association between diabetes and IgM antibodies against endogenous gonadotropin-releasing hormone in serum. A meta-analysis.

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## Background

Some studies reported a positive association between diabetes and GnRH IgM antibodies. We aimed to pool the published data to evaluate if there is a link between them or not.

## Methods

We searched PUBMED, WOS, and SCOPUS databases. Search terms used were\_ (("GnRH antibodies") OR ("GnRH")) AND ("diabetes mellitus"). Inclusion criteria were any controlled original studies that measured the IgM antibodies against endogenous GnRH in diabetes patients with no age restriction,

excluding reviews, case reports, editorials and animal studies. After complete screening, 3 studies were eligible for the meta-analysis. RevMan software (5.4) was used to perform the meta-analysis

## Results

The total number of patients included in the meta-analysis in the diabetes group is 99, and 288 in the control group. The pooled analyses between diabetes group and controls showed statistically significant association between diabetes and increased prevalence and levels of GnRH IgM antibodies in both prevalence and levels of GnRH IgM antibodies outcomes (RR = 2.11, 95% CI = 1.09 to 4.11, p-value = 0.03), (MD = 2.13, 95% CI = 0.25 to 4.02, p-value = 0.03) , respectively

No heterogeneity was observed among studies in prevalence and levels of GnRH IgM antibodies outcomes ( $p = 0.45$ ,  $I^2 = 0\%$ ), ( $p = 0.85$ ,  $I^2 = 0\%$ ), respectively.

## Conclusion

Diabetes is associated with increased prevalence and levels of GnRH IgM antibodies compared with healthy controls. GnRH IgM antibodies may play a role in the pathogenesis of diabetes. More observational studies with large sample sizes are needed to support our findings.

## abbreviations

GnRH= gonadotropin-releasing hormone. WOS= web of science.