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Association between serum vitamin A and hepatitis: A meta-analysis

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ADMINISTRATIVE INFORMATION

Support - Jilin University.

Review Stage at time of this submission - Data analysis.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202420040

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 08 February 2024 and was last updated on 08 February 2024.

INTRODUCTION

Review question / Objective MATA analysis; systematically summarize the relationship between vitamin A level and hepatitis in patients with hepatitis.

Condition being studied Our laboratory conducted regression analysis on hepatitis and vitamin A.

METHODS

Participant or population To avoid overlap with previous systematic reviews of hepatitis, we included patients with viral hepatitis, autoimmune hepatitis, alcoholic hepatitis, and nonalcoholic steatohepatitis. We included randomized clinical trials, irrespective of blinding, publication status or language. To avoid overlap with previous systematic reviews of hepatitis, we included patients with viral hepatitis, autoimmune hepatitis, alcoholic hepatitis, and nonalcoholic steatohepatitis.

Intervention No.

Comparator We studied vitamin A levels in patients with hepatitis compared with healthy controls. No other comorbidities and no vitamin A supplements, compared with healthy controls, were considered eligible for inclusion.

Study designs to be included We included randomized clinical trials, irrespective of blinding, publication status or language.

Eligibility criteria We excluded patients with drug-induced hepatitis and some patients with hepatitis with coexisting conditions, as well as persons who had received hepatitis vaccination.

Information sources The PubMed, Web of Science,and Cochrane Library online databases for

relevant articles published between the establishment of the database to 01 December 2021, using search terms developed in collaboration with a medical librarian without language restrictions.

Main outcome(s) there was A statistically significant difference in vitamin A levels between patients with hepatitis and healthy controls, although the results of the two different outcome measures were inconsistent. Serum vitamin A and RBP4 levels were significantly lower in patients with hepatitis than in healthy controls, except for 2 studies by Salvatore Petta et al, whose results showed that serum RBP4 levels were significantly higher in patients with hepatitis than in healthy controls. Retinol-binding protein A blood vitamin transporter that is synthesized by the liver and widely distributed in blood, cerebrospinal fluid, urine, and other body fluids.

Quality assessment / Risk of bias analysis We assessed the quality of included studies using an assessment scale based on the Combie scale, which is specifically designed to evaluate cross-sectional studies. Answers to the quality appraisal items were defined as Yes (1 point), No (0 point) and Not Applicable or Unclear (0.5 point). The maximum score on the Combie scale is 7. Studies with a score of 6–7 are deemed high quality (Grade A); those with a score of 4.0–5.5 are considered fair quality (Grade B); and those with a score of 0–3.5 are ranked as low quality (Grade C). The present study included only studies with a quality assessment of grade A or B, excluding those with grade C.

Strategy of data synthesis Derived from real data and synthetic data. While ensuring the relationship and integrity between other variables in the dataset, study the underlying distribution of the original data, select similar records from the synthesized data for each record of the real data, and then combine the two to generate mixed data.

Subgroup analysis age area and Disease type.

Sensitivity analysis Parameter sensitivity analysis.

Country(ies) involved China.

Keywords Meta-analyses, Vitamin A, Retinol-binding protein 4, Hepatitis.

Contributions of each author

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