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INPLASY

PLA2R and its antibody detection in hepatitis B-related membranous nephropathy and primary membranous nephropathy — a Systematic Review and Meta-analysis

INPLASY202430131

doi: 10.37766/inplasy2024.3.0131

Received: 30 March 2024

Published: 30 March 2024

Zhang, SS; Kang, X; Xue, LF.

Corresponding author:
Zhang Shan

2862226020@qq.com

Author Affiliation:
Shijiazhung People's hospital.

ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Formal screening of search results against eligibility criteria.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202430131

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 30 March 2024 and was last updated on 30 March 2024.

INTRODUCTION

Review question / Objective To evaluate the role of m-type phospholipase A2 receptor (PLA2R) and its antibody in the differentiation of hepatitis B virus-associated membranous nephropathy and primary membranous nephropathy. P: membranous nephropathy; I(E): hepatitis B virus-associated membranous nephropathy; C: primary membranous nephropathy; O: the value of both m-type phospholipase A2 receptor (PLA2R) and its antibody, either in the blood or in the kidney tissue; S: case-control study.

Condition being studied Membranous nephropathy is one of the most common types of pathology in nephrotic syndrome. M-type phospholipase A2 receptor (PLA2R) and its antibody are crucial laboratory indicators in membranous nephropathy. Serum PLA2R antibody can be used to distinguish primary membranous nephropathy from secondary membranous nephropathy, while some studies have found that the positive rate of PLA2R antigen and antibody is higher in patients with hepatitis B-related membranous nephropathy than the others secondary membranous nephropathy. Whether PLA2R and its antibody can differentiate primary membranous nephropathy from hepatitis B-related membranous nephropathy needs further study.

METHODS

Search strategy The sources: PubMed, Embase, Ovid, CNKI, Wanfang, Weipu; the search dates: 2009-now; language restrictions: English and Chinese. Mesh subject terms and free words for 'membranous nephropathy, anti phospholipase A2 receptor antibody, hepatitis B' were searched.

Participant or population Both primary membranous nephropathy and hepatitis B virus-associated membranous nephropathy, who have receive either the detection of serum PLA2R-antibody or renal biopsy.

Intervention Intervention(Exposure): people who are diagnosed as hepatitis B virus-associated membranous nephropathy by renal histopathology.

Comparator People who are diagnosed as primary membranous nephropathy by renal histopathology.

Study designs to be included Randomized controlled study, cohort study, case-control study.

Eligibility criteria Inclusion criteria: (1) Study objectives included serum PLA2R antibody and/or renal PLA2R expression in membranous nephropathy; (2) Sufficient data to extract binary variables according to the positive and negative serum PLA2R antibody and/or renal PLA2R antibody expression; (3) Diagnosis by renal histopathology. Exclusion criteria: patients had received or had not received long-term glucocorticoid and/or immunosuppressive therapy before the study.

Information sources The main sources: PubMed, Embase, Ovid, Cochrane, ClinicalTrail, CNKI, Wanfang, and Weipu; the search dates: 2009 (The year when PLA2R was discovered) -now; language restrictions: English and Chinese.

Main outcome(s) The difference between serum PLA2R antibody and/or renal PLA2R expression in membranous nephropathy.

Quality assessment / Risk of bias analysis The Newcastle Ottawa scale (NOS) will be used to evaluate the quality of the studies. Begg and Egger tests were used to detect publication bias.

Strategy of data synthesis The models to be used: The Q-value test and I^2 test will be used to test heterogeneity. If there is no statistical heterogeneity among the studies ($P > 0.1$, $I^2 < 40\%$), the fixed effect model will be used for analysis. Otherwise, the random effects model will be used for analysis; Methods to explore statistical heterogeneity: Subgroup analysis, Sensitivity analysis, regression analysis. Software package: Stata.

Subgroup analysis Subgroup analysis will be conducted according to different populations, clinical severity, and literature quality scores.

Sensitivity analysis Changing the inclusion criteria (especially controversial studies), excluding low-quality studies, using different statistical methods/ models to analyze the same data, etc.

Country(ies) involved China.

Keywords membranous nephropath, anti phospholipase A2 receptor antibody, hepatitis B.

Contributions of each author

Author 1 - Zhang Shanshan.
Email: 2862226020@qq.com
Author 2 - Kang Xi.
Author 3 - Xue Lanfen.