INPLASY PROTOCOL

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

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Diagnostic accuracy of globulin and albumin to globulin ratio for periprosthetic joint infection: a systematic review and meta-analysis

Wang, H[1]; Fu, T[2]; Li, H[3].

Review question / Objective: Perirprosthetic joint infection(PJI) was a catastrophic complication after total joint arthroplasty. The accurate diagnosis of PJI was still a challenge for surgeon. Globulin and albumin to globulin ratio(AGR) were proposed as good diagnostic biomarkers for PJI by Yongyu Ye et al. in 2020. Serveral studies also evaluated the diagnostic accuracy of these two biomarkers. The aim of this study was to synthesize the published data on these two biomarkers and assess the diagnostic value of these two biomarkers for PJI.

Condition being studied: Perirprosthetic joint infection(PJI) was a catastrophic complication after total joint arthroplasty. As the treatment of different PJI stage was different, it was extremely important to accurately diagnose PJI timely. Nowdays, accurate diagnosis of PJI was still a challenge for surgeon. A number of biomarkers for PJI were finding on the road.

INTRODUCTION

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METHODS

Search strategy: (((("Prosthesis-Related Infections"[Mesh]) OR ((((((((((((Prosthesis Related Infections[Title/Abstract]) OR (Prosthesis Related Infection[Title/Abstract])) OR (Infection, Prosthesis Related[Title/Abstract])) OR (Related Infection, Prosthesis[Title/Abstract])) OR (Related Infections, Prosthesis[Title/Abstract])) OR (Prosthesis-Related Infection[Title/Abstract])) OR (Infections, Prosthesis-Related[Title/Abstract])) OR (periprosthetic joint infection[Title/Abstract])) OR (prosthetic infection[Title/Abstract])) OR (peri-prosthetic joint infection[Title/Abstract])) OR (periprosthetic infection[Title/Abstract])) OR (prosthetic joint infection[Title/Abstract]))) AND ((((("Serum Albumin"[Mesh]) OR ((Albumin, Serum[Title/Abstract]) OR (Plasma Albumin[Title/Abstract]))) OR ("Serum Globulins"[Mesh])) OR (((((((((((((Globulins, Serum[Title/Abstract]) OR (Serum Globulin[Title/Abstract])) OR (Globulin, Serum[Title/Abstract])) OR (Pseudoglobulins[Title/Abstract])) OR (Pseudoglobulin[Title/Abstract])) OR (Euglobulins[Title/Abstract])) OR (Euglobulin[Title/Abstract])) OR (AGR[Title/Abstract])) OR (ALB[Title/Abstract])) OR (GLB[Title/Abstract])) OR (albumin to globulin[Title/Abstract])) OR (albumin to globulin ratio[Title/Abstract])) OR (albumin-to-globulin[Title/Abstract])) OR (albumin-to-globulin ratio[Title/Abstract])))) AND (sensitiv*[Title/Abstract] OR sensitivity and specificity[MeSH Terms] OR (predictive[Title/Abstract] AND value*[Title/Abstract]) OR predictive value of tests[MeSH Term] OR accuracy*[Title/Abstract]).

Participant or population: Periprosthetic joint infection.

Intervention: Infection arthroplasty revision surgery.

Comparator: Aseptic arthroplasty revision surgery.

Study designs to be included: Cohort study.

Eligibility criteria: For the objective of this review, we regarded studies as eligibleif they assessed the accuracy of globulin and albumin to globulin ratio in the diagnosis of PJI. Studies that did not provide sufficient data with which to calculate the values for true-positive, false-positive, true-negative, and false-negative results or that included the same patients were excluded.

Information sources: Pubmed, cochrane, embase, ovid, wos, scopus.

Main outcome(s): Sensitivity, specificity, PPV, NPV, DOR.

Additional outcome(s): sROC.

Data management: NoteExpress.

Quality assessment / Risk of bias analysis: QUADAS 2.

Strategy of data synthesis: In the presence of heterogeneity, random effects were chosen to combine the data; in the absence of heterogeneity, fixed effects were chosen to combine the data.

Subgroup analysis: Subgroup studies based on country, sample size, and diagnostic criteria.

Sensitivity analysis: If the combined results of the remaining studies are not significantly different from those without the deletion of any one of them, it means that the sensitivity analysis is passed.

Country(ies) involved: China.

Keywords: periprosthetic joint infection, globulin, albumin to globulin ratio.

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