Laboratory parameters between multisystem inflammatory syndrome in children and Kawasaki disease

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Abstract

Multisystem inflammatory syndrome in children (MIS-C) associated with coronavirus disease 2019 (COVID-19) has been described to partially overlap with Kawasaki disease (KD) with regard to clinical symptoms, but they are unlikely to share the same disease entity. We conducted a systematic review and meta-analysis to characterize the laboratory parameters of MIS-C compared with those of KD and Kawasaki disease shock syndrome (KDSS). Databases were searched for studies on laboratory parameters of MIS-C (hematology, inflammatory markers, cardiac markers and biochemistry) through May 31, 2021. Twelve studies with 3073 participants yielded 969 MIS-C patients. In terms of hematology, MIS-C patients had lower levels of leukocytes, absolute lymphocyte count and platelet count (PLT) than KD patients and had similar absolute neutrophil count (ANC) and hemoglobin (Hb) levels. In terms of inflammatory markers, MIS-C patients had higher levels of C-reactive protein, D-dimer and ferritin than KD patients and had similar levels of procalcitonin and ESR. In terms of cardiac markers, MIS-C patients had higher CPK levels than KD patients. The levels of NT-proBNP, troponin and AST were not significantly different between MIS-C and KD patients. In terms of biochemistry, MIS-C patients had lower levels of albumin, sodium and ALT and higher levels of creatinine than KD patients. In addition, MIS-C patients had lower levels of PLT, Hb and ESR and higher levels of ANC than KDSS patients. Measurement of laboratory parameters might assist clinicians with accurate evaluation of MIS-C and further mechanistic research.

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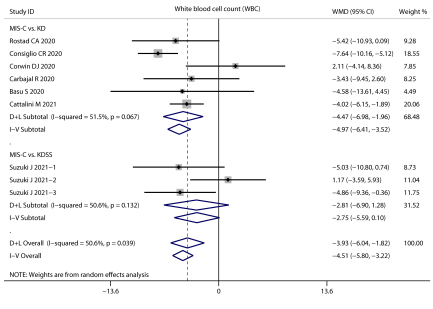

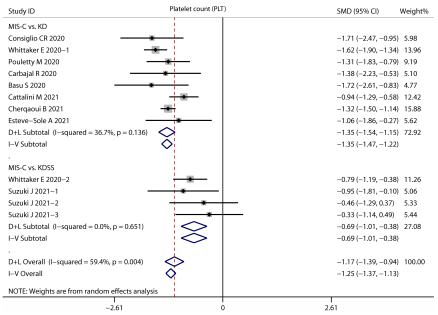

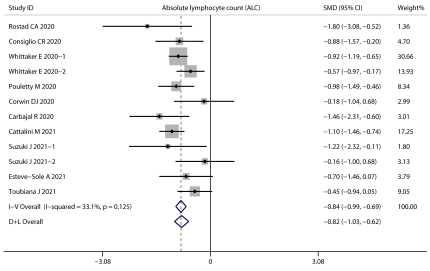

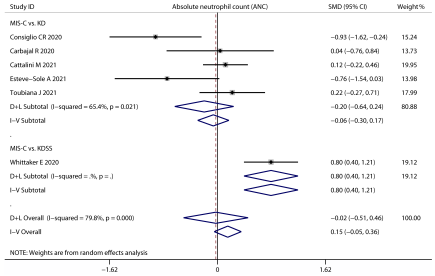

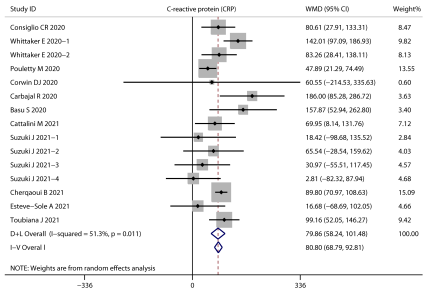

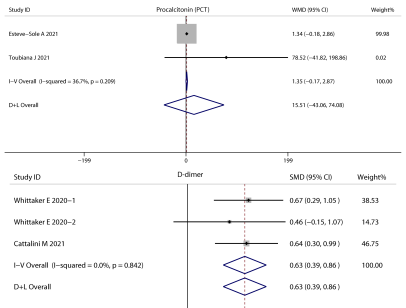

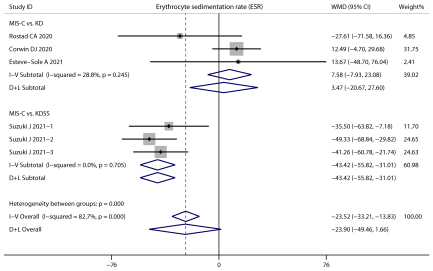

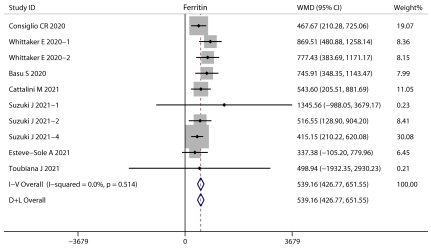

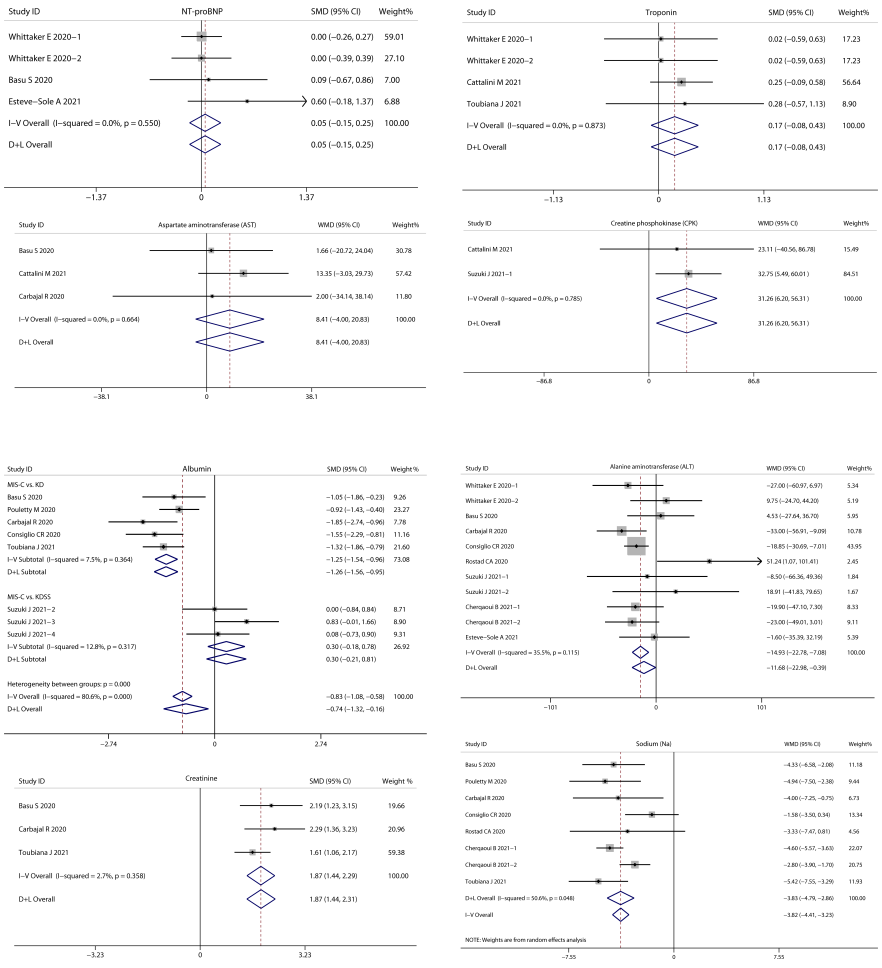

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Table 1 Detailed characteristics of the included studies.docx available at https://authorea.com/users/426196/articles/530789-laboratory-parameters-between-multisystem-inflammatory-syndrome-in-children-and-kawasaki-disease

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Table 2 Results of meta-analysis.docx available at https://authorea.com/users/426196/articles/530789-laboratory-parameters-between-multisystem-inflammatory-syndrome-in-children-and-kawasaki-disease