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Panda, SK¹; Sachdeva, M²; Mishra, A³; Behura, SS⁴; Jena, PK⁵.**ADMINISTRATIVE INFORMATION****Support** - Nil.**Review Stage at time of this submission** - Preliminary searches.**Conflicts of interest** - None declared.**INPLASY registration number:** INPLASY2023120061**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 14 December 2023 and was last updated on 14 December 2023.**INTRODUCTION**

Review question / Objective To investigate the possible role of oral Zinc therapy in treating neonatal indirect unconjugated hyperbilirubinemia by systematically reviewing the Randomized Control Trials.

Condition being studied In this systematic review neonates with unconjugated hyperbilirubinemia requiring phototherapy treatment.

METHODS

Participant or population Neonates with unconjugated hyperbilirubinemia requiring phototherapy.

Intervention Oral Zinc salts.

Comparator Placebo.

Study designs to be included Randomized Control Trials.

Eligibility criteria Neonates with sepsis, hemolytic jaundice i.e. glucose-6-phosphate dehydrogenase deficiency, rhesus incompatibility, ABO incompatibility, cholestasis, and congenital anomalies will be excluded.

Information sources The NLM (PubMed and PMC), Web of Science, Scopus, and EMBASE, databases will be searched to retrieve potential Randomized Control Trials. Further searches will be done using a reference list of included studies.

Main outcome(s) 1. The phototherapy duration needed to reach the desirable bilirubin level (in hours).
2. The serum bilirubin level per 12 h (as mean bilirubin level and/or mean changes of bilirubin level compared to the baseline, reported in mg/dL).
3. Side effects reported as percentage or number of patients).

Additional outcome(s) Exchange transfusion rate as a percentage or number of patients.

Quality assessment / Risk of bias analysis

Cochrane Collaboration's Risk of Bias Tool will be used for the risk of bias.

Strategy of data synthesis The data analysis will adhere to the methodologies outlined in the Cochrane Handbook for Systematic Reviews of Intervention to manage the data.

Subgroup analysis Subgroup analyses will be performed if there is a need to investigate the possible source of heterogeneity.

Sensitivity analysis Sensitivity analysis will be done to test the impact of various assumptions and decisions made during the review process and to see variations in the results owing to various input values.

Language restriction English.

Country(ies) involved India (Kalinga Institute for Medical Sciences, KIIT Deemed to be University).

Keywords Zinc, Neonatal Jundice, Hyperbilirubinemia.

Dissemination plans Publication in Indexed Journal.

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