

INPLASY

The Impact of Low-Dose Aspirin's Role on Preterm Labor: A Systematic Review and Meta-Analysis

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ADMINISTRATIVE INFORMATION

Support - N/A.

Review Stage at time of this submission - Completed but not published.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 29 March 2024 and was last updated on 29 March 2024.

INTRODUCTION

Review question / Objective The objective of this systematic review is to assess the efficacy of low-dose aspirin initiation in singleton pregnancies in decreasing the rate of preterm births.

Rationale Preterm birth is a global burden that causes life-long disabilities and neonatal morbidity. The rates of preterm births have remained high over the last few decades despite advances in technology due to limited preventative options. Aspirin is an inexpensive, relatively safe intervention.

Condition being studied Preterm birth, defined as birth before 37 weeks gestation, has been determined to be the most common cause of neonatal mortality worldwide. It is associated with

the occurrence of lifelong disabilities and developmental delays, placing a huge economic burden on healthcare systems of countries throughout the world Preterm Labor.

METHODS

Search strategy A systematic literature review was carried out using MEDLINE with Full Text, Academic Search Premier, CINAHL Ultimate, Cochrane Central Register of Controlled Trials, PubMed, TRIP, and Google Scholar. Databases were searched from January 2013 until October 2023, with last date of search October 9, 2023. A combination of keywords and MeSH terms were used for the search: 'preterm birth', 'premature birth', 'preterm labor', or 'preterm delivery', 'prematurity', 'aspirin', 'acetylsalicylic acid', 'ASA', 'low-dose ', 'pregnancy,' and 'singleton'. Limits were placed on how old the article was and only

articles from the last 10 years were used. The references of articles discovered were also searched to find any relevant articles the search might have missed.

Participant or population Singleton pregnant females, aged 14-40 years, who were under 20 weeks pregnant or had not conceived yet.

Intervention Low Dose Aspiring (<160 mg).

Comparator Placebo.

Study designs to be included Randomized controlled trials and cohort studies.

Eligibility criteria The following inclusion criteria were applied: singleton pregnant females, aged 14-40 years, who were under 20 weeks pregnant or had not conceived yet. This population was then randomized into two groups, one group of pregnant patients that received LDA and the other group that received a placebo.

Information sources MEDLINE with Full Text, Academic Search Premier, CINAHL Ultimate, Cochrane Central Register of Controlled Trials, PubMed, TRIP, and Google Scholar.

Main outcome(s) Incidence of preterm birth in singleton pregnancies.

Additional outcome(s) Maternal and Fetal Adverse Effects - pre-eclampsia, fetal loss, hemorrhage, and other adverse effects.

Data management All studies were screened using Covidence (Covidence.org).

Quality assessment / Risk of bias analysis The risk of bias was evaluated using the RoB2 for randomized trials and ROBINS-I for non-randomized trials.

Strategy of data synthesis Using ReviewManager, meta-analysis was conducted using pooled estimates of risk ratios (RR) with a random-effects model using Mantel-Haenszel methods.

Subgroup analysis Evaluation of the incidence of Preterm Birth <37 weeks gestation, <34 weeks gestation, and <28 weeks gestation.

Sensitivity analysis A stepwise removal of studies was performed to explore causes of heterogeneity.

Language restriction English.

Country(ies) involved United States.

Keywords Preterm birth; singleton pregnancy; aspirin; prevention; adverse pregnancy outcomes.

Contributions of each author

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