

# INPLASY

## The correlation between infants under gestational age and maternal environment: A meta-analysis

INPLASY202410045

doi: 10.37766/inplasy2024.1.0045

Received: 11 January 2024

Published: 11 January 2024

Lu, Y<sup>1</sup>; Qie, D<sup>2</sup>; Wu, JH<sup>3</sup>.

### Corresponding author:

You Lu

544407298@qq.com

### Author Affiliation:

Pediatrics, Department of Child Health Care, West China Second University Hospital, Sichuan University, Chengdu, China.

### ADMINISTRATIVE INFORMATION

**Support** - 2021YFS0113 Metagenomics and metabolomics study of gut microbiota in Han children with autism spectrum disorder in Sichuan, China.

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

**Conflicts of interest** - None declared.

**INPLASY registration number:** INPLASY202410045

**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 11 January 2024 and was last updated on 11 January 2024.

### INTRODUCTION

**Review question / Objective** Fetal growth restriction, in medical literature refers to small for gestational age, is associated with mortality and significant risks to health. Fetal growth depends on maternal factors, fetal factors and placental function. This meta-analysis studied the association between incidence of small for gestational age infant and maternal conditions, including general condition, bad habits and diseases.

**Condition being studied** The etiology of of SGA is diverse and complex and remains unclear. Current studies have shown that the occurrence of SGA may be affected by maternal, fetal, placental umbilical cord and paternal factors. Maternal diseases may increase the risk of SGA. Pregnant women with systemic diseases, such as severe

heart disease, kidney disease, chronic hypertension, adrenal hypofunction, antiphospholipid d syndrome are more likely to have SGA infants.

### METHODS

**Participant or population** Studies included both SGA and non-SGA groups; Trails reported as RCTs; Studies had provided sufficient information to conduct the meta-analysis.

**Intervention** Studies included both SGA and non-SGA groups.

**Comparator** Studies included both SGA and non-SGA groups.

**Study designs to be included** Trials reported as RCTs.

---

**Eligibility criteria** (1) Studies included both SGA and non-SGA groups; (2) Trails reported as RCTs; (3) Studies had provided sufficient information to conduct the meta-analysis; (4) The literature was published already and allowed us to get entire text. While, studies were excluded if they: (1) did not set the control group; (2) were the following kind of papers, including animal experiments, case report, review, etc; (3) do not have useful data; (4) without full text; (5) were republished data or with similar research groups; (6) were irrelevant to the subject.

**Information sources** A comprehensive literature search was conducted in the databases of PubMed, Cochrane Library, China National Knowledge Infrastructure (CNKI), Wan Fang and China Biology Medicine (CBM, SinoMed) from Jan 1, 2000 to Oct 1, 2022.

**Main outcome(s)** Maternal general conditions (age, BMI, whether multipara), maternal bad habits (smoking and alcohol intake), maternal disease (prepregnancy and pregnancy complication).

**Quality assessment / Risk of bias analysis** The quality of the included studies was appraised using Cochrane Collaboration risk-of-bias Instrument, Begg's test and funnel plot were used to evaluate publication bias.

**Strategy of data synthesis** All statistical analysis was performed using STATA 14.0 software, College Station, TX, USA. Data in this study belongs to dichotomous data, and the relationship between maternal factors and SGA was reported as relative risk (RR) and 95% confidence interval (CI). RR values were considered significance if CI did not cross  $x=1$ . Heterogeneity between the studies was determined by  $I^2$  and  $p$ . If  $I^2 \leq 50\%$  or  $p > 0.1$ , then no significant heterogeneity was existed and a fixed-effect model was used. Otherwise, a random-effect model was used. The results were considered significant if  $p$  was less than 0.05.

**Subgroup analysis** Heterogeneity between the studies was determined by  $I^2$  and  $p$ . If  $I^2 \leq 50\%$  or  $p > 0.1$ , then no significant heterogeneity was existed and a fixed-effect model was used. Otherwise, a random-effect model was used and a subgroup analysis was recommended to find the potential sources of heterogeneity.

**Sensitivity analysis** In addition, if there was significant heterogeneity, sensitivity analysis, in which one study at a time is excluded and the results are recalculated to test the stability of the results, is encouraged.

**Country(ies) involved** China - Pediatrics, Department of Child Health Care, West China Second University Hospital, Sichuan University, Chengdu.

**Keywords** Small for gestational age; Maternal factor; Bad habits, Pregnant diseases; Meta-analysis.

#### **Contributions of each author**

Author 1 - You Lu.

Email: 544407298@qq.com

Author 2 - Di Qie.

Email: chachajuk@yeah.net

Author 3 - Jinhui Wu.

Email: wujinhuifei@163.com