Meta-Analysis of the Effect of Smoking Cessation During Pregnancy on Childhood Obesity and Overweight

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Introduction

Background:
- A well-established association between maternal smoking during pregnancy and childhood obesity and overweight.
- The biological mechanisms for this association are still unclear.
- Few studies have been done on the potential protective effect of maternal smoking cessation against overweight and obesity.

Objective:
- To review studies on the effects of maternal smoking cessation on childhood overweight and obesity.
- To review studies on the biological mechanisms through which maternal smoking affects childhood obesity and overweight.

Methods

Developing the Search Strategy:
- A systematic review of studies published between 1/1/2015 and 1/1/2018 on several databases (i.e., PubMed, EMBASE, Web of Science).
- To find those pertaining to the effects of maternal smoking on childhood obesity and overweight.
- Then added cessation terms to the maternal smoking search strategy and removed the time constraints.
- This new smoking cessation search strategy contained the maternal smoking cessation articles found earlier to ensure our accuracy.

Meta-analysis:
- Data from different studies will be extracted by 2 researchers independently.
- Pooled associations will be calculated.

Results

Systematic Search of Maternal Smoking
- 566 articles identified in PubMed.
- After screening, 58 related to maternal smoking and 2 related to smoking cessation.

Systematic Search of Maternal Smoking Cessation
- 213 articles identified in PubMed on maternal smoking cessation effect on childhood obesity and overweight.
- 5 are confirmed, but final results are pending.
- Results on the pooled odds ratios (ORs) of the eligible articles’ data on maternal smoking cessation’s effects on childhood obesity and overweight are pending.
- Will search other databases as shown in the table below.

Articles Found

<table>
<thead>
<tr>
<th>Databases</th>
<th># of Articles</th>
</tr>
</thead>
<tbody>
<tr>
<td>PubMed</td>
<td>213</td>
</tr>
<tr>
<td>EMBASE</td>
<td>575</td>
</tr>
<tr>
<td>Global Health</td>
<td>5</td>
</tr>
<tr>
<td>Cinahl</td>
<td>5</td>
</tr>
<tr>
<td>Web of Science</td>
<td>5</td>
</tr>
<tr>
<td>Cochrane</td>
<td>5</td>
</tr>
</tbody>
</table>

Articles found in PubMed on maternal smoking cessation:
- N=213
- Articles title and abstract screened:
  - N=213
- Full text articles assessed for eligibility:
  - N=5
- Full-text articles excluded:
  - N=0
- Studies included in qualitative synthesis:
  - N=5
- Studies to be included in quantitative synthesis:
  - N=5

Conclusion

- The 5 identified articles on smoking cessation support that mothers who quit smoking before or early in pregnancy have offspring with lower risk of obesity than those who continued smoking.
- Meta-analysis on the pooled effects of maternal smoking cessation during pregnancy on childhood obesity and overweight is pending.
- More intervention is needed to help pregnant smokers to stop smoking, which can reduce obesity and overweight in offspring.

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