# ORIGINAL ARTICLE

# The Association between Infertility and *Helicobacter pylori* Infection: A Meta-Analysis of Case-Control Studies

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## SUMMARY

*Background: Helicobacter pylori (H. pylori)* **is increasingly associated with extra-digestive diseases. Infertility is a common condition, with an incidence of 10 to 15% of couples. Studies examining the association of *H. pylori* infection and infertility have reported conflicting results. This meta-analysis aimed to investigate the association between *H. pylori* infection and infertility.**
*Methods:* **Studies of *H. pylori* infection and infertility were identified in PubMed, EMBASE, the Cochrane Library, and China National Knowledge Infrastructure. We performed a meta-analysis of all case-control studies.**
*Results:* **Seven studies that analyzed the relationship between *H. pylori* infection and infertility, with a combined study population of 1,902 patients, were included in the meta-analysis (n = 626 for patients; n = 1,276 for controls). In the infertility group, 344 (54.9%) patients were *H. pylori*-positive, and 495 (38.8%) were *H. pylori*-positive in the control group. Our result suggested that *H. pylori* infection was associated significantly with infertility (OR = 1.45, 95% CI: 1.197 - 2.160; $I^2$ = 36.5%, Z = 3.15, p = 0.002). Begg's and Egger's funnel plot showed no publication bias (p = 0.807).**
*Conclusions:* **Our meta-analysis identified a possible association between *H. pylori* infection and infertility.**
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**Supplementary Table.**

**Table S1. Construction of search strategies.**

| Databases | Period of search | Search strategies |
|---|---|---|
| PubMed | Until January, 2018 | (((("Helicobacter pylori" [MeSH]) OR Campylobacter pylori [Title/Abstract])) AND (("Infertility" [MeSH]) OR (((((Sterility, Reproductive [Title/Abstract]) OR Sterility [Title/Abstract]) OR Reproductive Sterility [Title/Abstract]) OR Subfertility [Title/Abstract]) OR Subfertility [Title/Abstract])) |
| EMBASE | Until January, 2018 | 1. 'Helicobacter pylori'/exp OR 'Helicobacter pylori' 2. 'Infertility'/exp OR 'Infertility' 3. 'Sterility'/exp OR 'Sterility' 4. 'Reproductive Sterility'/exp OR 'Reproductive Sterility' 5. 'Subfertility'/exp OR 'Subfertility' 6. 'Subfertility'/exp OR'Subfertility' 7. 2 OR 3 OR 4 OR 5 OR 6 8 1 AND 7 |
| The Cochrane library | Until January, 2018 | #1 MeSH descriptor: [Helicobacter pylori] explode all trees #2 MeSH descriptor: [Infertility] explode all trees #3 Sterility, Reproductive: tiab, kw (Word variations have been searched) #4 Sterility: ti, ab, kw (Word variations have been searched) #5 Reproductive Sterility: ti, ab, kw (Word variations have been searched) #6 Subfertility: ti, ab, kw (Word variations have been searched) #7 Subfertility: ti, ab, kw (Word variations have been searched) #8 Campylobacter pylori: ti, ab, kw (Word variations have been searched) #9 #1 or #8 #10 #2 or #3 or #4 or #5 or #6 or #7 #11 #9 and #10 |
| CNKI | Until January, 2018 | Search terms resemble the terms used in PubMed in Chinese |

**EMBASE - Excerpta Medica Database, CNKI - China National Knowledge Infrastructure, MeSH - Medical Subject Heading.**