

Cervical Pessary for prevention of preterm birth (a meta-analysis)

Oluyomi-Obi T., Johnson J.

Section of Maternal Fetal Medicine

Department of Obstetrics and Gynecology

University of Calgary, Alberta, Canada



Abstract

Preterm birth is a major health problem and contributes to more than 50% of the overall perinatal mortality. We sought to compare the effectiveness of cervical pessaries to placebo for the management of threatened preterm labour. Search Methods: From inception until April April 2014 we searched Medline (via Pubmed), Cochrane(CENTRAL) as well as database of unpublished trials using the terms cervical pessary, short cervix, preterm birth and randomized controlled trials. Unpublished studies were also reviewed from protocols registered at clinicaltrials.gov and abstracts of conferences in the grey journal (AJOG). We identify studies examining treatment with a cervical pessary to prevent preterm birth in patients with a sonographic short cervix. Selection Criteria: We included randomised controlled studies comparing use of cervical pessary to no other treatment. We excluded studies which were quasi-randomised, not randomised or studies comparing cervical pessary to other treatments. Data Collection and Analysis: A metanalysis of the two included studies was performed using the Revman software and comprehensive metanalysis. Main Results: >45 articles were reviewed and 2 were included in the analysis. For the primary outcome of preterm delivery prior to 34weeks, the risk ratio of 0.29 [confidence interval 0.14 to 0.58] was obtained using Mantel-Haenszel with a fixed effect model and the NNT was 7. Using a random effects model with inverse variance an odds ratio of 0.52 [CI 0.06 - 4.85] was obtained. Conclusion: From the current analysis, cervical pessary may have some benefit for the prevention of preterm delivery in patients with a sonographic short cervix however there was significant heterogeneity among studies and more well designed studies are needed.

Introduction

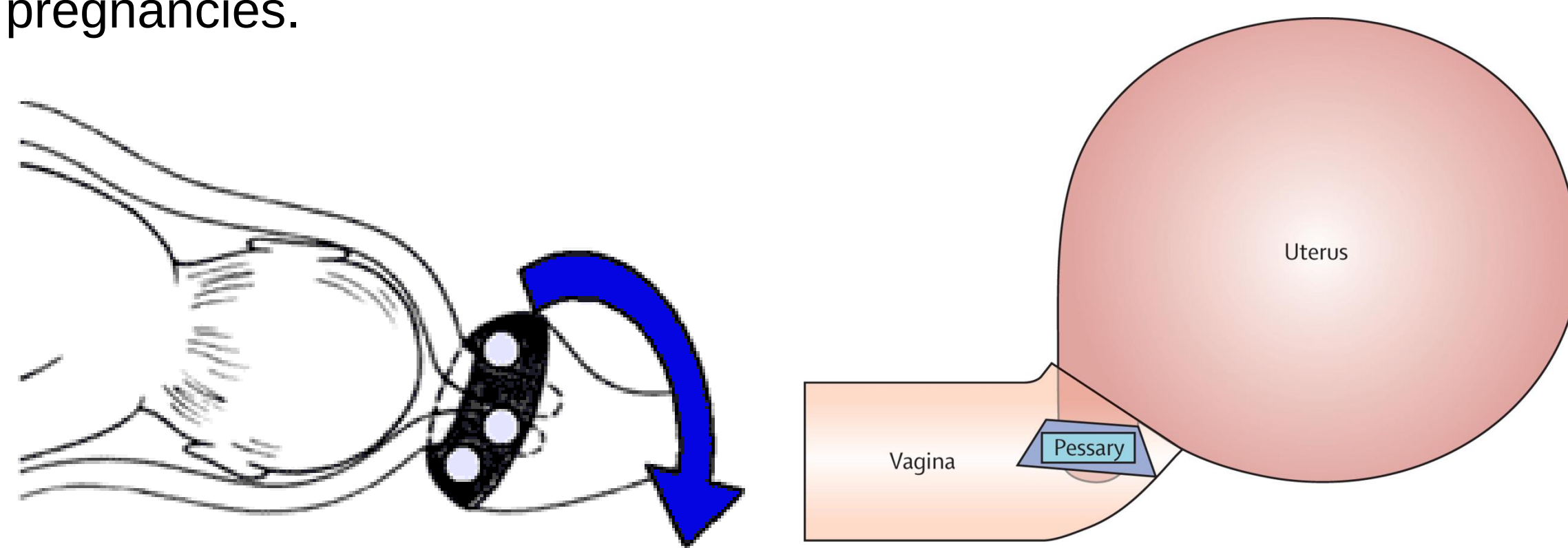
Preterm birth is a major health problem and contributes to more than 50% of the overall perinatal mortality.

Preterm labour is a condition which can be considered as having three main components - uterine contractility, cervical ripening (effacement or dilation) and decidual/membrane activation.

Uterine contractility occurs throughout pregnancy but progresses from “contractures” to “contractions” of smooth muscle.

Cervical competence on the other hand is felt to be related to tensile strength in the fibrous connective tissue of the cervix, as against contractions of smooth muscle which makes up only 8% of the cervix. The third mechanism involved with preterm labour is decidual membrane activation with the final chemical pathway likely being related to prostaglandins.

It is possible to delay delivery to some extent by arresting uterine contractility and reversing cervical compliance or by reinforcing cervical competence by mechanical means. We looked at the use of the cervical pessary for the purpose of preventing preterm birth in a sonographically shortened cervix focusing mainly on singleton pregnancies.



Search Methods

From inception until April April 2014 we searched Medline (via Pubmed), Cochrane(CENTRAL) as well as database of unpublished trials using the terms cervical pessary, short cervix, preterm birth and randomized controlled trials. Unpublished studies were also reviewed from protocols registered at clinicaltrials.gov/ and abstracts of conferences in the grey journal (AJOG). We identify studies examining treatment with a cervical pessary to prevent preterm birth in patients with a sonographic short cervix.

Objectives

To compare the effectiveness of cervical pessaries to placebo for the management of threatened preterm labour.

Selection Criteria

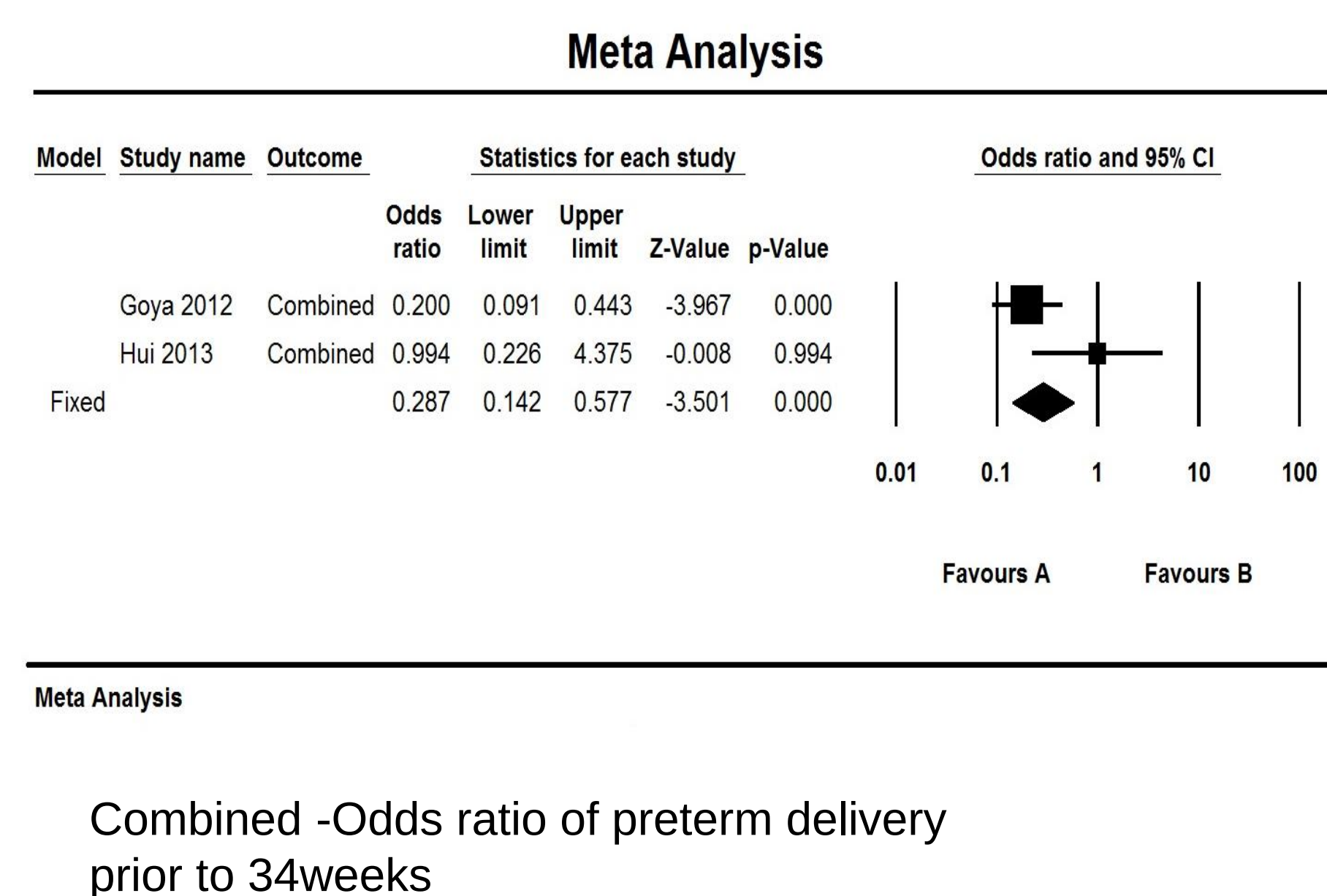
We included randomised controlled studies comparing use of cervical pessary to no other treatment. We excluded studies which were quasi-randomised, not randomised or studies comparing cervical pessary to other treatments.

Data collection and Analysis

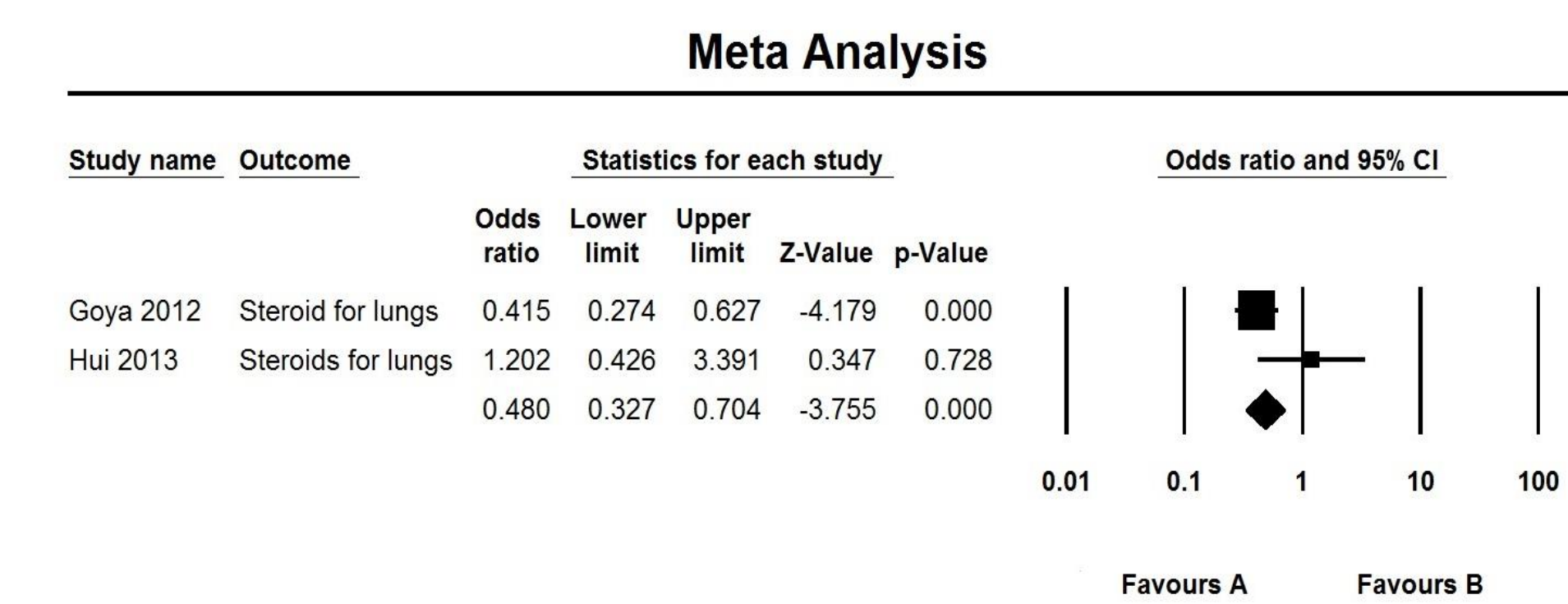
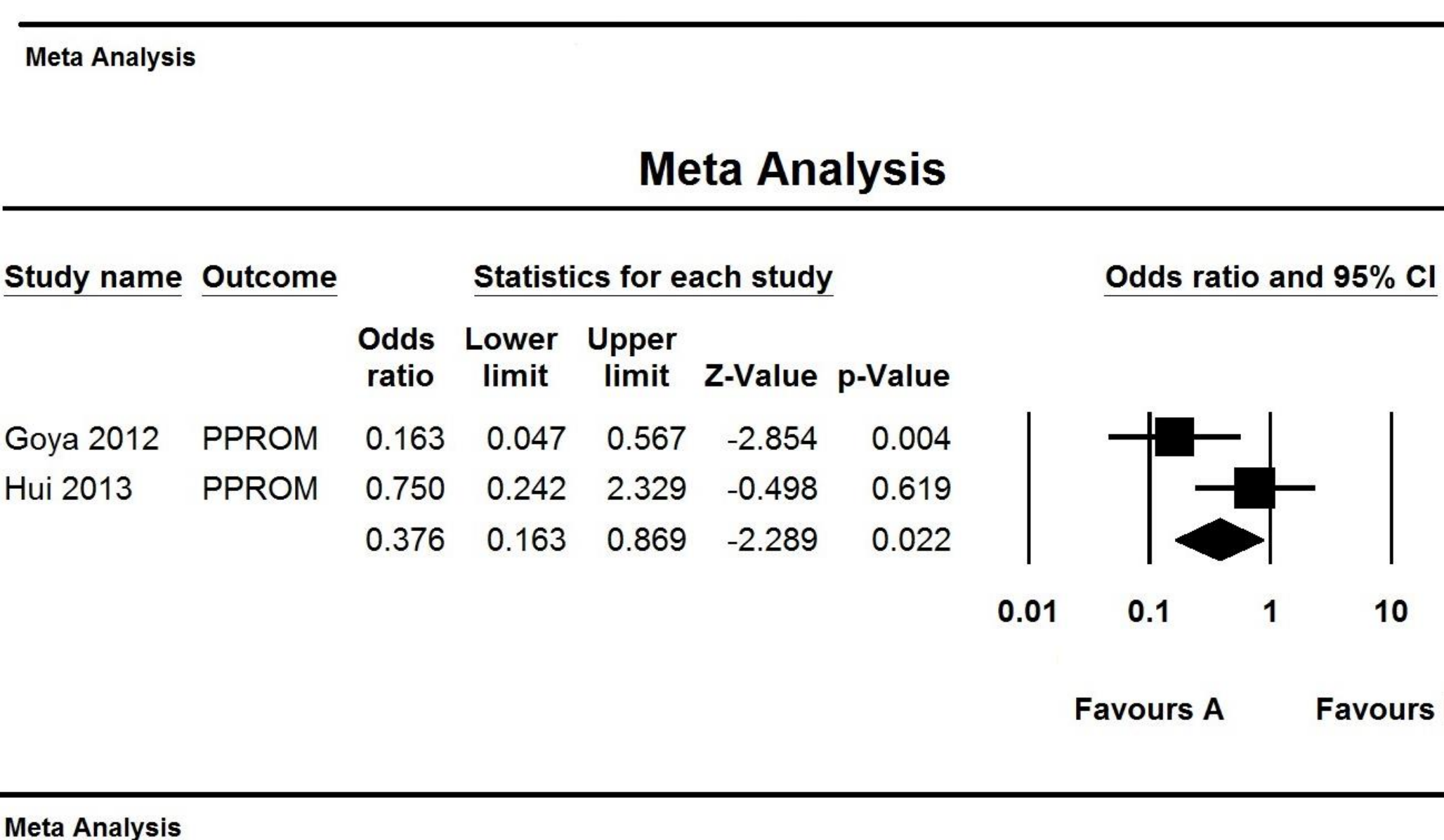
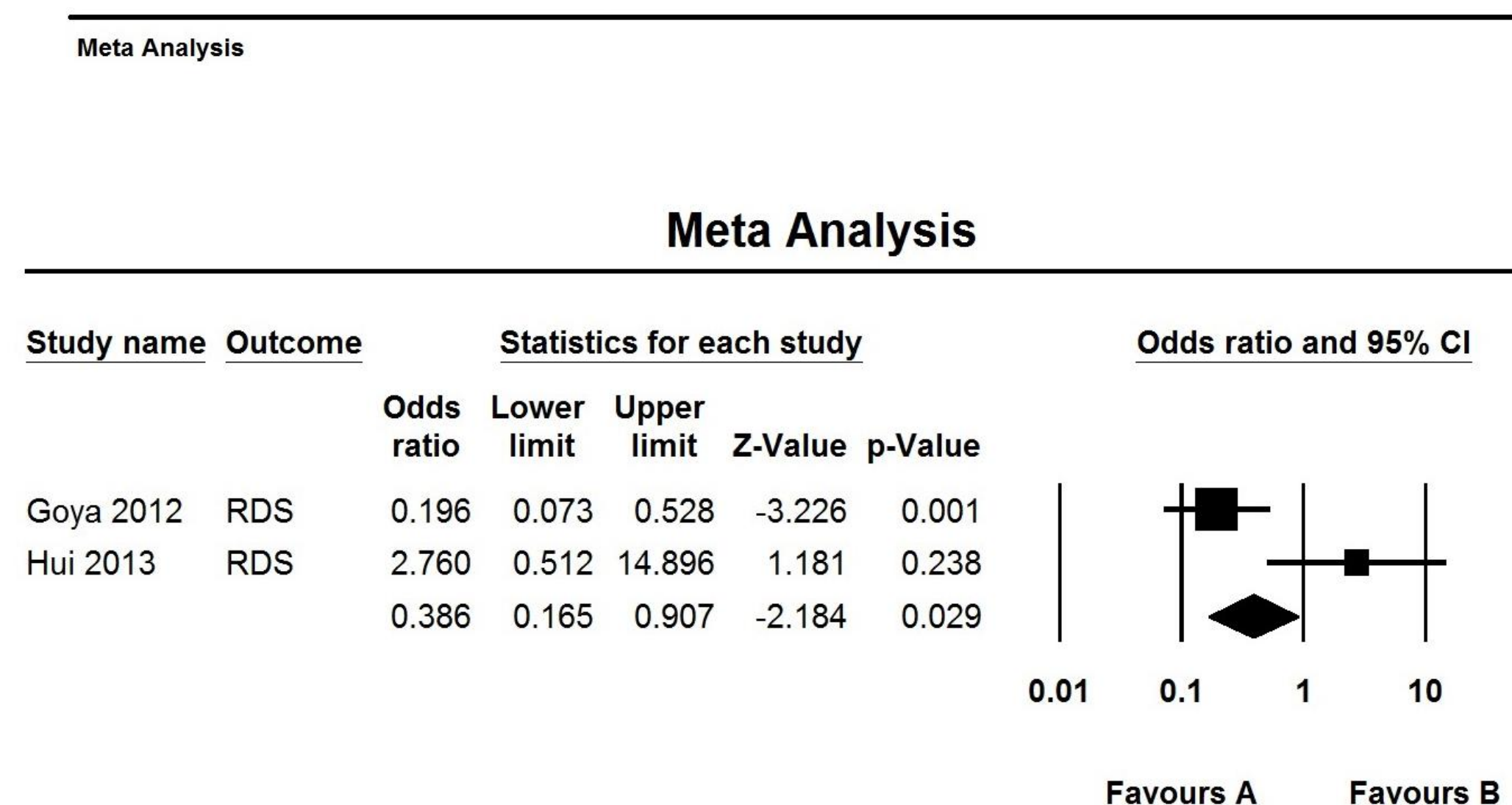
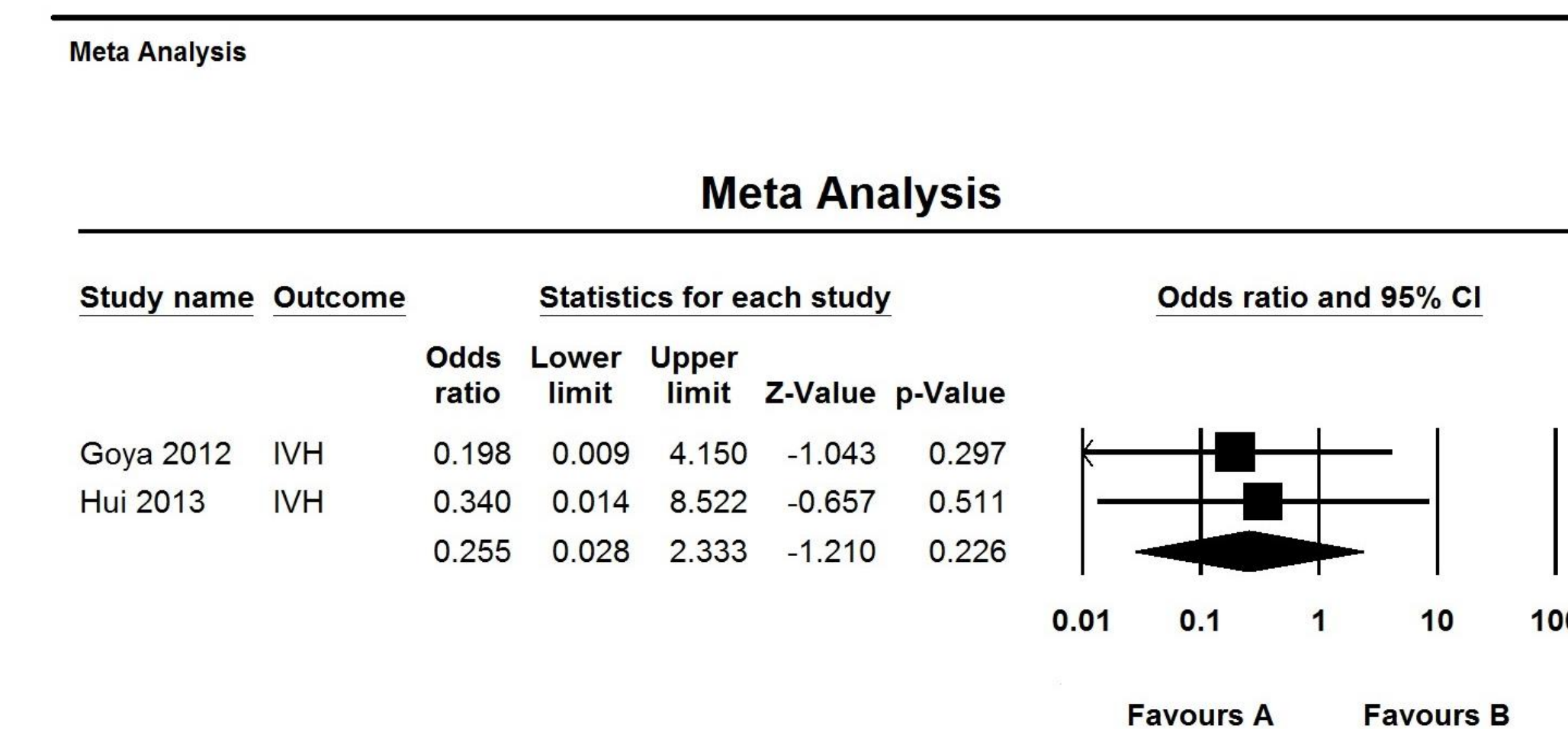
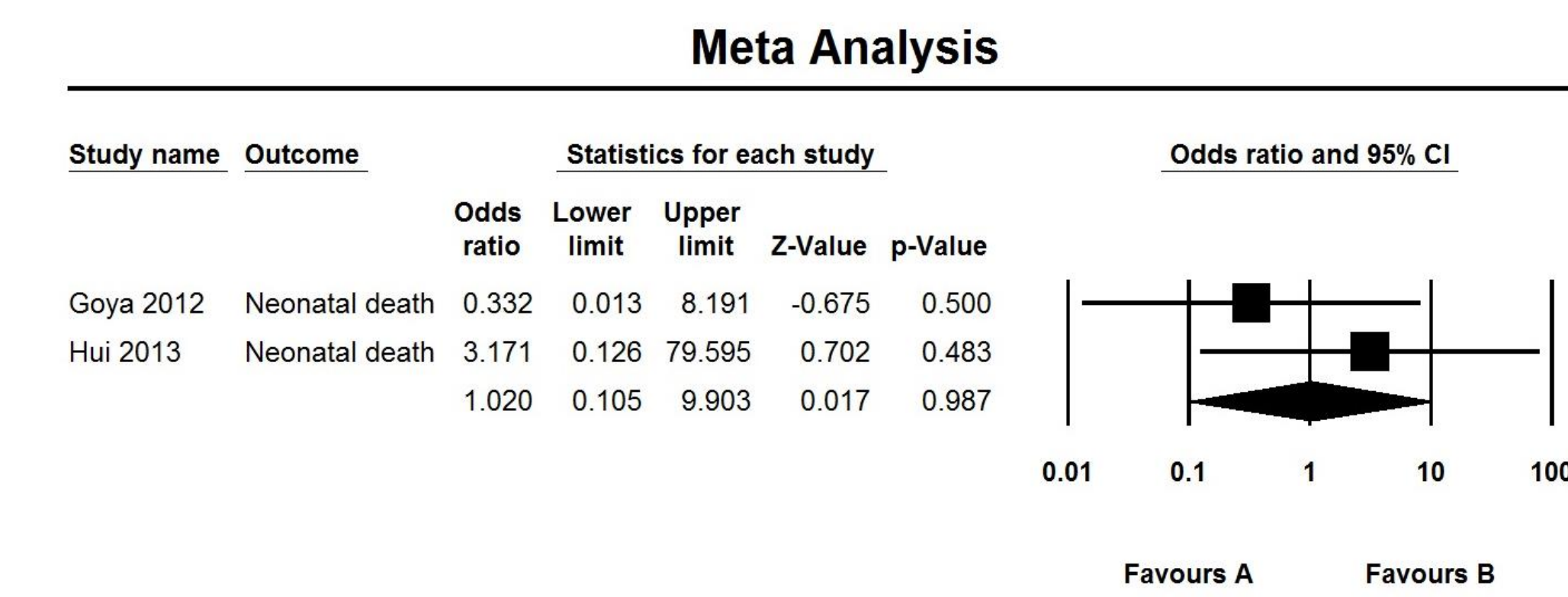
A metanalysis of the two included studies was performed using the Revman software and comprehensive metanalysis.

Main Results

More than 45 articles were reviewed and 2 were included in the analysis. For the primary outcome of preterm delivery prior to 34weeks, the risk ratio of 0.29 [confidence interval 0.14 to 0.58] was obtained using Mantel-Haenszel with a fixed effect model and the NNT was 7. Using a random effects model with inverse variance an odds ratio of 0.52 [CI 0.06 - 4.85] was obtained.



Results



Meta Analysis

Conclusion

From the current analysis, cervical pessary may have some benefit for the prevention of preterm delivery in patients with a sonographic short cervix however there was significant heterogeneity among studies and more well designed studies are needed.

References

1. Goya et al, Cervical pessary in Women with a short cervix (PECEP) an open label randomised trial. Lancet 2012
2. Hui et al, Cerclage Pessary for Preventing Preterm Birth in Women with a Singleton Pregnancy and a Short Cervix at 20 to 24 Weeks: A Randomized Controlled Trial . AJOG 2013
3. Abdel-Aleem H et al. Cervical pessary for preventing preterm birth (Cochrane Review) 2013
4. Filho et al. Short cervix syndrome: current knowledge from etiology to the control . Arch Gynecol Obstet (2013)
5. Romero et al. The preterm labour syndrome
6. Liem et al. **Cervical Pessaries for the Prevention of Preterm Birth: A Systematic Review** . Obstetrics and Gynecology International 2013.,

Acknowledgements

We would like to thank Dr. Elena Carreras for her prompt response to questions about their study.