



Pregnancy in Axial Spondyloarthritis: A Systematic Review & Meta-Analysis

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Background:

Axial spondyloarthritis (axSpA) is an inflammatory arthritis affecting the sacroiliac joints and the spine. This chronic condition affects a wide range of ages, with many affected females of childbearing age. At present it is unclear how axSpA affects pregnancy, in terms of prevalence of pregnancy related complications and foetal outcomes. Similarly, studies exploring the effects of pregnancy on axSpA disease activity and medication use have been limited, with divergent conclusions drawn.

Methods:

A systematic review of case-controlled trials, observational studies, cross-sectional studies and case series (n>5) focusing on axSpA in pregnancy was completed. Studies were compiled by searching EMBASE, Medline (OVID), CINAHL, Maternity and Infant Care (MIDIRS online), and Web of Science from time of inception to October 2019 for key words related to axSpA, pregnancy and pregnancy complications. Two reviewers independently reviewed articles to determine suitability for inclusion. The Newcastle & Ottawa Scale was used to assess risk of bias. Data extraction was performed using a standardized template to streamline data to allow comparison and meta-analysis. Statistical heterogeneity was assessed by confidence interval overlap of the odds ratios, chi² test output and output of the I² statistic.

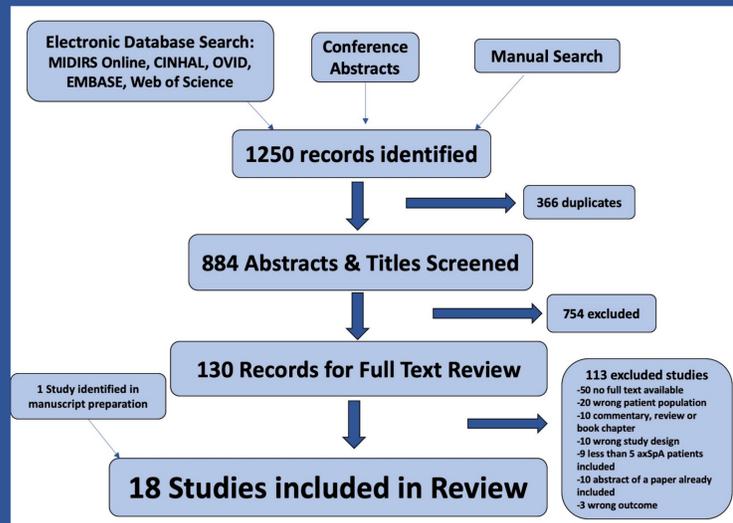
Objective:

To review current literature on axSpA in pregnancy to determine effect of disease on pregnancy outcomes.

Table 1: Description of Included Studies

Authors	Publication	Data Source Period	Country	Study type	Data Source	Control Population
Retrospective Studies						
Gomor et al	1980	not stated	Hungary	Cross-sectional	Not stated	Other MSK disorders
Ostensen et al	1982	1974-1980	Norway	Cross-sectional	Single center	None
Jajic et al	1995	not stated	Croatia	Cross-sectional	Not stated	None
Ostensen et al	1997	prior to 1994	Norway & 12 other countries	Cross-sectional	Multi-center	None
Sampaio-Barros et al	2005	1990-2004	Brazil	Cross-sectional	Single center	None
Lui et al	2011	prior to 2010	Canada	Cross-sectional	Single center	Females with Psoriasis
Zhou et al	2012	2004-2011	China	Cross-sectional	Single center	None
Jakobsson et al	2015	2001-2009	Sweden	Cross-sectional	National Register	Healthy controls
Timur et al	2015	2007-2015	Turkey	Case control	Single center	Healthy controls
Kristjandottir et al	2019	1981-2017	Iceland	Cross-sectional	National Register	Healthy controls
Park et al	2019	1994-2017	Korea	Cross-sectional	Multi-center	Healthy controls
Strouse et al	2019	2007-2012	USA	Case control	Multi-center	Healthy controls
Mork et al	2019	1997-2016	Denmark	Cross-sectional	National Register	Healthy controls
Prospective Studies						
Ostensen et al	1983	1979-1982	Norway	Case control	Single center	Healthy controls
Ostensen et al	2004	not stated	Switzerland	Cohort	Single center	None
Ursin et al	2018	2006-2016	Norway	Cohort	National Register	None
Zbiden et al	2018	2000-2016	Switzerland	Case control	Single center	Healthy controls
Smith et al	2019	2004-2018	USA	Case control	Multi-center	Healthy controls

Figure 1: Search Strategy



Results:

The search strategy returned 884 records, 130 full text articles were assessed for eligibility. Following assessment by two reviewers, 18 studies with a total of 3,166 axSpA women were eligible for inclusion (figure 1 & table 1). There was an increase in the prevalence of pre-eclampsia (OR 1.3, 95% CI 0.92-1.82) and IUGR (OR 1.17, 95% CI 0.26-5.17) and a significant increase in prevalence of cesarean section (OR 1.85, 95% CI: 1.46-2.30) in axSpA females (figure 2). Prevalence of all analyzed fetal complications was higher in axSpA pregnancies (figure 3), but did not reach significance. Disease activity during pregnancy varied significantly, but overall 47.8% of patients assessed by standardized outcomes reported increased disease activity in pregnancy.

Figure 2: Pregnancy Complications

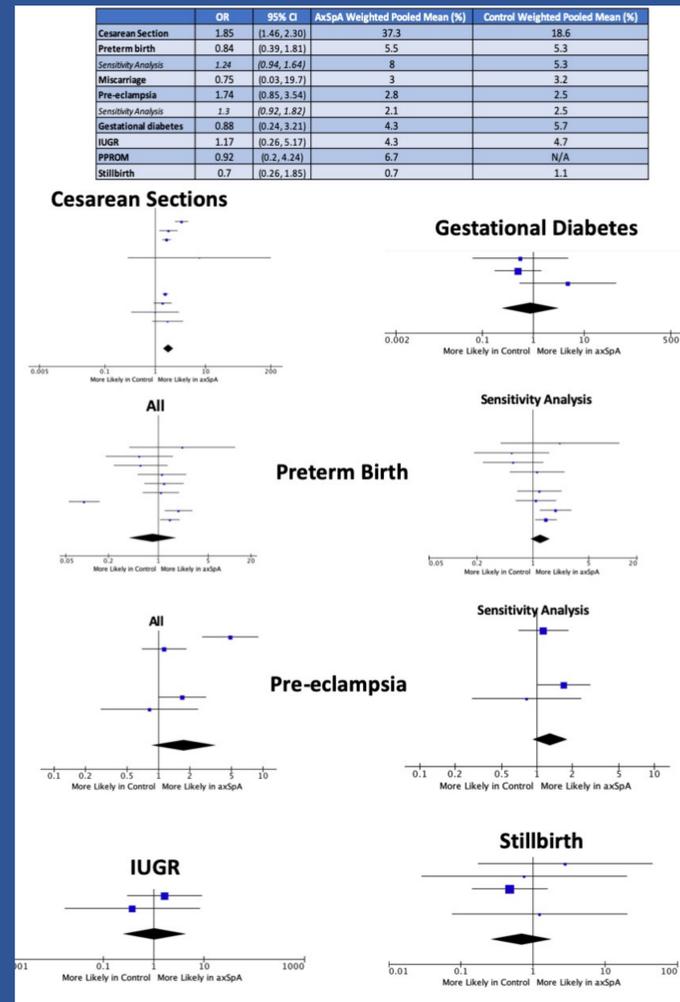
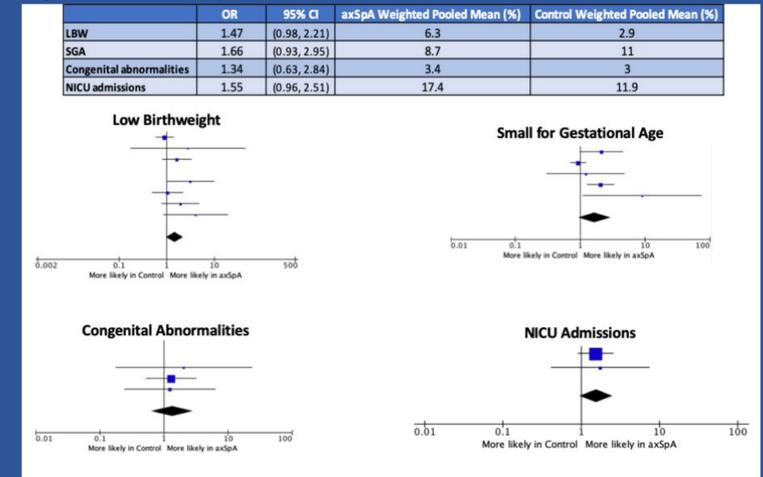


Figure 3: Fetal Complications



Conclusion:

Females with axSpA overall have significantly higher prevalence of cesarean section than the general population. There is trend towards higher rates of pre-eclampsia, IUGR and a number of fetal complications. There is a risk of active disease in pregnancy for a high proportion of axSpA females. Ongoing development of national registries could help to better understand axSpA in pregnancy.