

OP0211

PATERNAL INFLAMMATORY ARTHRITIS IS ASSOCIATED WITH A HIGHER RISK OF MISCARRIAGES: RESULTS OF A LARGE MULTICENTER STUDY (IFAME-FERTILITY)

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Background: The effect of inflammatory arthritis (IA) on pregnancy outcomes has been studied mainly in women. Paternal older age, sperm DNA integrity and certain genetic defects have been associated with worse pregnancy outcomes (1). However, pregnancy outcomes of partners of men with IA have never been studied.

Objectives: To describe the pregnancy characteristics and outcomes of partners of men diagnosed with IA.

Methods: We performed a multicenter cross-sectional retrospective study conducted in eight Dutch hospitals. Men with IA (Rheumatoid Arthritis (RA), Juvenile Idiopathic Arthritis (JIA) and Spondyloarthritis (SpA)) who were over 40 years old and indicated that their family size was complete were invited to participate. Participants completed a digital questionnaire that included pregnancy-related questions and questions regarding their demographic and clinical information. To analyze the impact of IA on pregnancy outcomes, pregnancies were classified into two groups; pregnancies that occurred after diagnosis of IA and before the diagnosis of IA.

Results: In total 628 male participants diagnosed with IA were included. 408 men reported 897 singleton pregnancies that resulted in 794 live births. Regarding pregnancy characteristics, pregnancies conceived after diagnosis of IA had a higher mean paternal and maternal age at conception and a lower rate of spontaneous pregnancies (90.91 vs 96.60%, $p < 0.005$) (See Table 1). With regards to pregnancy outcomes, pregnancies conceived after receiving the diagnosis of IA had a lower rate of live births (86.36% and 89.22%, $p = 0.053$) and a significant higher rate of miscarriages (12.27 vs 7.53%, $p < 0.05$). After correcting for maternal age and year of pregnancy, pregnancies conceived after the diagnosis of IA had a higher risk of miscarriages (OR 1.71 [CI 1.04-2.81], $p < 0.05$). No statistically significant differences between the two groups were reported for the rates of abortions, preterm births and pregnancy complications.

Table 1. Pregnancy characteristics and outcomes.

	All pregnancies	Pregnancy after diagnosis of IA	Pregnancy before diagnosis of IA	P value
Pregnancy characteristics				
Total number of pregnancies	897	220	677	
Maternal age at conception, mean (SD)	29.00 (5.00)	30.69 (5.16)	28.45 (4.83)	$p < 0.005$
Paternal age at conception, mean (SD)	31.31 (5.72)	34.27 (6.08)	30.49 (5.34)	$p < 0.005$
Spontaneous pregnancy, n (%)	854 (95.21)	200 (90.91)	654 (96.60)	$p < 0.005$
Pregnancy duration-months, median (IQR)	39 (38-40)	39 (38-40)	39 (38-40)	$p = 0.928$
Pregnancy outcomes				
Live births, n (%)	794 (88.52)	190 (86.36)	604 (89.22)	$p = 0.053$
Miscarriage, n (%)	78 (8.70)	27 (12.27)	51 (7.53)	$p < 0.05$
Abortion, n (%)	25 (2.78)	3 (1.36)	22 (3.25)	$p = 0.128$
*Medical indication	5 (20.00)	0 (0)	5 (22.73)	
*Personal reasons	20 (80.00)	3 (100.00)	17 (77.27)	
Pre-term birth	149 (16.61)	31 (14.09)	118 (17.43)	$p = 0.248$
Pregnancy complications				
No complications during pregnancy, n (%)	754 (84.34)	184 (83.64)	570 (84.57)	$p = 0.741$
Hypertensive disorders (hypertension, pre/eclampsia), n (%)	41 (4.57)	8 (3.64)	33 (4.87)	$p = 0.445$
Gestational Diabetes Mellitus	11 (1.28)	2 (0.94)	9 (1.38)	$p = 0.619$
Growth restriction	12 (1.34)	1 (0.45)	11 (1.65)	$p = 0.193$

Conclusion: This is the largest study to describe the pregnancy characteristics and outcomes of partners of men diagnosed with IA and the first to demonstrate that paternal IA is associated with a higher risk of miscarriage. Prospective studies are needed to corroborate these findings.

REFERENCES:

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OP0212

MEN DIAGNOSED WITH INFLAMMATORY ARTHRITIS BEFORE THE AGE OF 40 YEARS HAVE A LOWER FERTILITY RATE THAN THOSE DIAGNOSED AFTER THE AGE OF 40 YEARS: RESULTS OF A LARGE MULTICENTER STUDY (IFAME-FERTILITY)

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Background: The effect of inflammatory arthritis (IA) on fertility has been mainly studied in women. Multiple factors associated with lower fertility rate in women can also be present in male patients with IA (1). The fertility rate in men with IA, however, has never been studied.

Objectives: To describe the fertility rate (number of biological children per individual) of men with IA.

Methods: We performed a multicenter cross-sectional retrospective study conducted in eight Dutch hospitals. Men with IA (Rheumatoid Arthritis (RA), Juvenile Idiopathic Arthritis (JIA) and Spondyloarthritis (SpA)) who were over 40 years old and indicated that their family size was complete were invited to participate. Men who were still planning on having biological children were excluded. Participants completed a digital questionnaire that included fertility-related questions and questions regarding their demographic and clinical information. To analyze the impact of IA on male fertility rate, patients were divided into groups according to the age at the time of their diagnosis: age < 30 years, age 31-40 years and age > 41 years.

Results: In total 628 participants diagnosed with IA were included. The response rate 34.87%. Information regarding their age, age at diagnosis, clinical diagnosis and number of children is presented per group in Table 1. Regarding the total number of children per man, there was a statistically significant difference between the three groups ($p < 0.005$). The mean total number of children was significantly lower in men diagnosed at age < 30 years (1.39 [SD 1.41]) and at age 31-40 years (1.60 [SD 1.35]) compared to those diagnosed after at age > 41 years (1.88 [SD 1.14]). Compared to men from the general population of the Netherlands, the total number of children of men diagnosed at age > 41 years was not statistically different (1.88 vs 1.80, respectively).

Table 1. Participants' basic demographic and clinical characteristics, including the number of biological children per men.

	All patients	IA diagnosed at age < 30 years	IA diagnosed at age 31-40 years	IA diagnosed at age > 41 years
Total, n (%)	628	137 (21.82)	149 (23.73)	342 (54.46)
Age, mean (SD)	57.17 (9.98)	53.01 (9.96)	52.76 (7.35)	61.06 (9.47)
Diagnosis, n (%)				
• iRA	297 (47.29)	42 (30.66)	67 (44.97)	188 (55.32)
• AJIA	10 (1.59)	10 (6.25)	0 (0)	0 (0)
• ISpA (incl. PsA)	320 (50.96)	90 (65.69)	83 (55.70)	147 (42.98)
Age at diagnosis, mean (SD)	41.29 (13.08)	26.27 (9.15)	36.99 (5.66)	49.98 (9.70)
Disease duration, mean (SD)	15.89 (11.88)	26.48 (12.57)	15.70 (8.52)	11.30 (9.87)
Number of biological children, mean (95% CI)	1.71 (1.60-1.81)	1.39 (1.15-1.63)^{a,b}	1.60 (1.38-1.82)^a	1.88 (1.75 -2.01)

^a $p < 0.05$ compared to those diagnosed age > 41 years ^b $p < 0.05$ compared to those diagnosed age > 31-40 years