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Treatment effect of oil-based contrast at HSG is dependent on pain at HSG but not on volume of contrast

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OBJECTIVE: We recently showed in a randomized clinical trial (RCT) in 1,119 women that oil-based contrast during hysterosalpingogram (HSG) increases ongoing pregnancy rates as compared to water-based contrast.¹ Here, we assess the impact of pain during HSG and used volume of contrast on the effectiveness of oil-based contrast.

DESIGN: Secondary analysis of a multicentre RCT.

MATERIALS AND METHODS: During the study, pain during HSG was measured in seven centres by means of the Visual Analogue Scale (VAS) (range 0.0 to 10.0 in cm, with higher scores indicating more severe pain). The used volume of contrast was recorded in 16 centres. We assessed the impact of pain and volume of contrast on ongoing pregnancy rates, as well as the interaction between each of these two and the treatment effect using logistic regression analysis. Data were analysed according to intention to treat principle.

RESULTS: Pain was measured in 400 women (overall median pain score of 5.0 (IQR 3.0-6.8), oil group 4.8 (IQR 3.0-6.4), water group 5.0 (IQR 3.0-6.7) (P=0.28)). There was significant interaction between pain and ongoing pregnancy (VAS cut-off 5.0, P=0.047). In women experiencing pain >5.0 HSG with oil contrast increased the ongoing pregnancy rate (oil versus water Relative Risk (RR) 1.7, 95% CI 1.1-2.5), while in women with a pain score ≤5.0 there was no effect of oil contrast compared to water contrast (RR 0.98, 95% CI 0.66-1.5). Volume of used contrast was recorded in 512 women (overall median volume of 8.3ml (IQR 5.8-14.0), 9.0ml (IQR 5.7-15.0) versus 8.0ml (IQR 5.9-13.0) (P=0.72)). There was no interaction between contrast volume and the type of contrast used. Also, pain and contrast volume were not related.

CONCLUSIONS: The treatment effect of oil-based contrast during HSG is dependent on pain experienced during the procedure. This points at a mechanistic pathway of the use of oil-based contrast, for example by flushing debris or dislodge of mucus plugs from the tubes.

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TREATMENT EFFECT OF OIL-BASED CONTRAST AT HSG IS DEPENDENT ON PAIN AT HSG BUT NOT ON VOLUME OF CONTRAST.

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TABLE 1. Ongoing pregnancies after the use of oil and water contrast during HSG stratified for pain

	Oil-based contrast (n=199)	Water-based contrast (n=201)	Relative risk (95% CI)
VAS ≤5.0	34/118 (28.8)	33/113 (29.2)	0.98 (0.66-1.5)
VAS >5.0	40/81 (49.4)	26/88 (29.6)	1.7 (1.1-2.5)

We recently showed in a randomized clinical trial (RCT) in 1,119 women that oil-based contrast during hysterosalpingogram (HSG) increases ongoing pregnancy rates as compared to water-based contrast.¹ Here, we assess the impact of pain during HSG and used volume of contrast on the effectiveness of oil-based contrast.

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