Implementation of an office-based semen preparation method (SEP-D Kit) for intra-uterine insemination (IUI): A controlled randomised study to compare the IUI pregnancy outcome between a routine (swim-up) and the SEP-D Kit method

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To the Editor: The aim of this study was to compare the Sep-D Kit with the standard swim-up sperm washing method regarding pregnancy outcomes**.**

Male factor infertility is a term that describes inability to conceive associated with a problem identified in the male partner. Intra-uterine insemination (IUI) has been shown to be effective in a range of sperm abnormalities causing male factor subfertility. Ovulation drugs are used to stimulate oocyte production to increase the chances of success. A prepared sperm sample is then injected into the uterus by means of a catheter, the so-called IUI method. Sperm washing and preparation is an inherent part of an IUI cycle. Semen processing methods are designed to enhance sperm function and increase the chances of conception by positively affecting motility and morphology; however, they negatively affect the total sperm count.[1,2]

One main sperm washing method, the swim-up method, requires a lot of equipment. During this method, semen is washed twice by centrifugation and then left to stand for an hour in an incubator for the viable sperm to swim up into the overlaid medium. Investing in many disposables and such laboratory equipment may not always be cost-effective. For IUI application in a developing country situation, a simple and inexpensive sperm preparation method is essential. Such a method has been proposed – the Sep-D Kit method. Sep-D is a simple device, consisting of a syringe with pre-filled commercial medium. The semen is sucked up into the syringe and left to stand for an hour in order for the viable sperm to swim up into the medium. The semen is then expelled, and the insemination catheter can be connected directly to the device for insemination. This method, however, needs to be comparable in outcome to an already successful established method such as the swim-up method.

This is a preliminary report on the first 200 patients of an ongoing controlled randomised study. Patients were randomly assigned to either the Sep-D or the swim-up sperm washing method. The two different sperm washing methods were prepared according to standard procedures. The total motile count was calculated for both pre- and post-preparation methods.

The pregnancy rate in the swim-up group was 8% versus 16% in the Sep-D group (Table 1). This difference in pregnancy rates between the two sperm washing methods is significant ($p<0.05$). The average age in both groups was 34 years and the average morphology was

Table 1. Pregnancy rate for swim-up versus Sep-D

	Swim-up	Sep-D	Swim-up + Sep-D
Total patients (*N*)	100	100	200
Pregnancies (*N*)	8	16	24
Pregnancy rate (%)	8	16	12
Average age (yrs)	34	34	34
Average morphology (% normal)	8.01	8.47	8.24

Table 2. Semen parameters pre- and post-preparation

	Swim-up		Sep-D	
	Before	After	Before	After
Average count (con./ml)	49.84	31.125	50.05	31.96
Average motility (% motil.)	54.22	87.46	57.5	94.52
Average TMC	42.36	12.96	44.62	14.43

con. = concentration; motil. = motility; TMC = total motile count.

8%, showing that there is no significant difference between the two sperm washing methods with regard to these parameters. There was also no significant difference between the two sperm washing methods with regard to average count, average motility and average total motile count pre- and post-preparation (Table 2). It is therefore unclear why the pregnancy rates differ; however, further studies are being conducted. Owing to the fact that Sep-D is simple and easy to use, any gynaecologist can offer IUI to infertile patients without the necessity for any laboratory facility or major resources. Sep-D will therefore benefit both the gynaecologist and sub-fertile patients.

1. Henkel RR, Schill W. Sperm preparation for ART. Reprod Biol Endocrinol 2003;1:108-130.
2. Kucuk T, Sozen E, Buluc B. Intrauterine insemination with double ejaculate compared with single ejaculate in male factor infertility: A pilot study. Journal of Andrology 2008;29(4):404-407.