

# The Outcome of the Seminal Fluid Parameters Collected via Coitus Interruptus versus Masturbation

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## SUMMARY

A one year study was carried out to determine the outcome of the seminal fluid parameters collected via masturbation and coitus interruptus in 151 patients who were undergoing intrauterine insemination (IUI) and patients who came for seminal analysis. There were no statistically significant differences in terms of volume, concentration, progressive motility and normal morphology from specimens collected via coitus interruptus compared to specimens collected via masturbation. Pregnancy outcomes were also comparable.

## KEY WORDS:

*Semen analysis, Masturbation, Coitus Interruptus*

## INTRODUCTION

Harvesting the maximum quantity and quality of spermatozoa is of extreme importance in an intrauterine insemination (IUI) program for infertility treatment purposes<sup>1,2</sup>.

The most widely accepted method of semen collection in humans for the purpose of semen analysis or artificial insemination is via masturbation<sup>1-6</sup>. However some Muslims have a reserved view regarding this method of seminal collection because of views held by some Islamic scholars especially Shafi'i school of Fiqh who feel that masturbation falls into the forbidden categories of sexual fulfillment<sup>7</sup>. These scholars anyhow stated that masturbation may be permissible under certain conditions such as avoiding premarital sex. One may therefore view that collection of semen by masturbation in assisted reproduction is acceptable.

Coitus interruptus on the other hand is a known and permitted practice for contraception in Islam<sup>8</sup> even though this may not be the most effective method. Practicing Muslims therefore would not hesitate in using this sperm collection method. This is an important consideration because the majority of Malaysians where this study was carried out are Muslims.

Various studies support the view that seminal collection obtained through collection devices have better quantitative and qualitative characteristics compared to that obtained through masturbation<sup>9</sup>. The method of collection using collection devices also closely resembles the semen produced naturally. It has been shown that seminal characteristics can be

significantly improved by the extent of sexual stimulation<sup>1-3, 5, 10</sup>. Considering coitus interruptus is a more natural method compared to masturbation, and the extent of sexual stimulation is therefore assumed to be superior, we would expect the seminal characteristics to be better using this method. Unfortunately published data on seminal fluid collection comparing coitus interruptus and masturbation is limited.

Masturbation is still the preferred method for sperm collection in almost all fertility centres across Malaysia. It is usually performed in private in the institute or at home. Our centre in International Islamic University Malaysia provides a suitable room for couples who wish to obtain the seminal sample via coitus interruptus and masturbation since 2004.

The aim of this study is to determine if there is a difference between the seminal parameters obtained via coitus interruptus versus masturbation – two methods which are currently employed by our centre to obtain seminal fluid samples.

## MATERIALS AND METHODS

One hundred and fifty one men who were referred to the infertility centre participated in this study. Convenience sampling was used. All patients who attended the centre within the study period were included. The study period was from June 2005 until May 2006. If the same patient came for repeat intrauterine insemination (IUI) or seminal fluid analysis (SFA), they would be excluded from the study if they use the same method of semen collection. There were no other exclusion criteria. All patients were recruited if they come for the first time. A proforma was used to get the patients' details and their comments after the procedure. The semen analysis results were then entered into the same proforma before data analysis.

In order to collect the seminal sample, patients were instructed to produce one semen specimen via either masturbation or coitus interruptus (patients's own choice) after a period of abstinence of 3 to 5 days. The specimen was collected into a sterile, wide-mouthed container. Semen specimens were assessed according to the WHO standards for volume, sperm concentration, progressive and non-progressive motility and normal morphology<sup>12</sup>. Two laboratory embryologist were involved in the seminal fluid assessment.

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Table I: Study population characteristics for each method of semen collection

Patients' Characteristics	Coitus Interruptus (n= 39 (25.8%))	Masturbation (n=112 (74.2%))	p
IUI*	n= 31	n= 70	
SFA#	n=8	n=42	
Age of patient (years)			
Median (IQR)	36 (10)	35 (7)	0.611 (>0.05)
Age of female spouse (years)			
Median (IQR)	31 (4)	31 (6)	0.786 (>0.05)
Smoking			
No	18 (46.2%)	51 (45.5%)	
Yes	14 (35.9 %)	46 (41.1%)	
Ex-smoker	7 (17.9 %)	15 (13.4%)	0.737 (>0.05)
Drinking Status			
Non-alcoholic	n=39 (100%)	n=110 (98.2% )	
Alcoholic	n=0	n=2(1.8 % )	0.478 (>0.05)

\*IUI=patient come for intrauterine insemination, #SFA=patient come for seminal fluid analysis only, IQR=interquartile range

Table II: Comparison of Semen Analysis for Ejaculates Collected Via Masturbation and Coitus Interruptus

Semen parameters	Coitus Interruptus (n=39)	Masturbation (n=112)	p
Volume(ml)			
Median(IQR)*	2.5 ( 1)	3 ( 2)	0.491 (>0.05)
Concentration (x10 <sup>6</sup> /ml)			
Median (IQR)	96 (98)	106 (112)	0.779 (>0.05)
Progressive motility (%)			
Mean ± SD#	56.37 ± 19.81	54.46 ± 20.87	0.619 (>0.05)
Normal morphology (%)			
Median(IQR)	94.5 (7.5)	94.3 (10.1)	0.722 (>0.05)
Clinical Pregnancy	6/31 patients (19.4%)	8/70 patients (11.4%)	0.288 (>0.05)
Take home baby rate	4/31 patients (12.9%)	5/70 patients (7.1%)	0.349 (>0.05)

\*IQR = interquartile range. #SD = standard deviation

Table III: Method of seminal collection opted by patient for future semen collection

	Coitus Interruptus group (n= 39 (25.8%))	Masturbation group (n=112 (74.2%))
Choice for future semen collection		
a. Coitus Interruptus	n=39 (100%)	n=74 (66.1% )
b. Masturbation	n=0 (0%)	n=38 (33.9%)

The patients were then followed up until the end of their pregnancy if they were found to be pregnant. A clinical pregnancy is defined when fetal heart activity is documented by ultrasound evaluation. Take home baby is defined as pregnancy ending in a delivery of a live baby.

Statistical data analysis was performed using SPSS 12.0 using the Mann Whitney U-Test and Independent-t-Test. Differences were considered statistically significant when  $p < 0.05$ .

## RESULTS

One hundred and fifty one patients were included during the one year study period. One hundred and one (66.9%) attended the clinic for IUI, and the remaining fifty (33.1%) for SFA as part of infertility investigations. The majority of the patients were Malays (n=134)(88.7%), followed by Chinese (n=11)(7.3%), Indian (n=5) (3.3%), and other(s) (n=1)(0.7%). These tallies with their religions of which 137 (90.7%) are Muslims; Buddhist, Hindu, and other(s), 9 (6%), 3(2%), 2 (1.3 %), respectively (Figure 1).

Of the patients enrolled into the study, 45.7% (n=69) were non smokers, and the rest were either smokers or ex-smokers. Most of the patients did not consume alcohol (98.7%)(n=149), and the other 1.3%(n=2) was only social drinker. There was no statistically significant difference between the two study groups.

There was also no statistical difference of age between the two groups (Table I). The results obtained from this study are reported in Table II. No significant differences were seen in terms of volume, concentration, progressive motility and normal morphology from specimens collected via coitus interruptus compared to specimens collected via masturbation. Only two patients had male factor attributed to the infertility with sperm counts of less than 20 millions – one in the 'masturbation' group, and the other one in the 'coitus interruptus' group. There were higher clinical pregnancy rate for IUI using semen collected from coitus interruptus compared to those collected via masturbation – 19% (6/31) versus 11.4% (8/70) respectively. The take home baby rate was also higher (12.9%) (4/31) for semen collected via coitus interruptus versus 7.1% (5/70) for semen collected

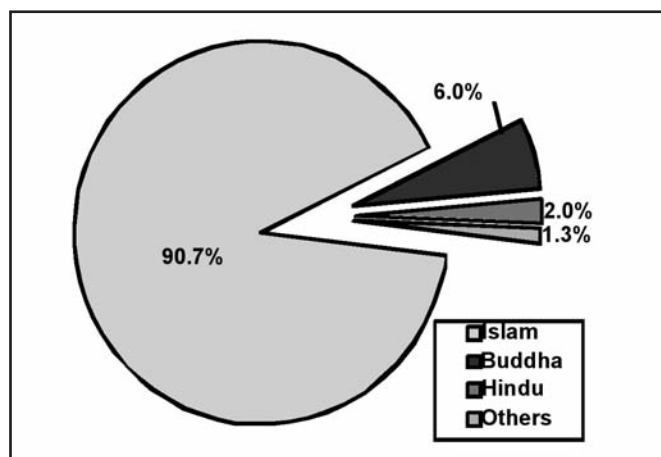


Fig. 1: Distribution of patients by religion.

via masturbation. The differences however were not statistically significant. The total clinical pregnancy rate following IUI using both methods during this period was 13.8%.

Another interesting finding from this study is that the initial method of seminal fluid collection, 25.8% (n=39) of patients used coitus interruptus, and 74.2% (n=112) used masturbation. However after explaining the availability of suitable room in the infertility clinic that can be used for coitus interruptus, the percentage was almost reversed with 74.8% (n=113) wanted to use coitus interruptus method in the future and 25.2% (n=38) wanted to use masturbation. All who had adopted coitus interruptus wanted to continue with the same method (Table III, Figure 2).

## DISCUSSION

The most widely accepted method of semen collection for the purpose of semen analysis or assisted reproductive technique (ART) is by masturbation<sup>2, 11, 12</sup>. Published data on seminal fluid collection comparing coitus interruptus and masturbation is very limited even on international basis at the time of study initiation. Dehghani *et al* (2004) comparing between semen parameters of ejaculates collected via masturbation versus coitus interruptus from the same 30 patients showed that collection of ejaculates via masturbation is superior to coitus interruptus<sup>13</sup>.

This study however aimed to look at the seminal parameters from semen collected from different patients. Even though different patients were allocated to the two groups, there were no significant difference statistically in terms of smoking, drinking and age, that could have affect the reading. Even though male factors were not excluded, there were only two patients with sperm counts of less than 20 millions, and they were in the two different groups.

Ideally the patients should be randomly allocated into the study groups. In our setting however, it is not possible due to the sensitivity involved in the process especially due to the fact that the majority of our patients were Malays and Muslims. It was difficult to ask the same patients to produce

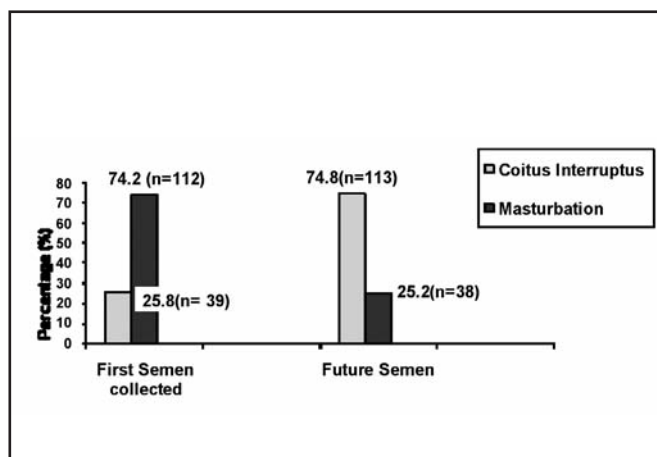


Fig. 2: Method of Seminal Fluid Collection and future preferred method.

seminal sample using both methods due to various reasons, either social, psychological, or religious issues, thus preventing us from performing direct comparative study.

The result from this study did not show any significant differences in terms of volume, concentration, progressive motility and normal morphology from semen collected via coitus interruptus compared to semen collected via masturbation. So offering coitus interruptus for those who wish or prefer this method could be a non disadvantageous option. However, our study must still be interpreted with caution as this is not a randomized study, and is just a convenience sampling. Bigger sample sizes would definitely provide better picture and might give a statistically significant differences.

Another important finding from this study is that the pregnancy rate for IUI from semen collected via coitus interruptus is higher than those via masturbation – 19.4 % versus 11.4% though not statistically significant. The same applies to the take home baby (12.9% versus 7.1%). The clinical pregnancy rate following IUI using both methods during this period was 13.8%. This is comparable with findings from HUKM (Hospital Universiti Kebangsaan Malaysia)- another well known fertility centre in Malaysia, which has a clinical pregnancy rate of 12.7% following IUI<sup>14</sup>.

These findings will undoubtedly make a significant impact on patients in Malaysia who due to psychological status or religious belief decline to collect ejaculates via masturbation. However, as mentioned above, bigger sample size is required with more patients enrolled into the study especially into the coitus group in order to achieve better and more representative result.

From this study also, 66.1% of patients who use masturbation in the initial semen collection wish to use coitus interruptus in the future if another cycle of IUI or if further semen samples are required. All who had used coitus interruptus however wanted to continue with the same method. This local preference (most likely due to the fact that majority of our patients were Malays and Muslims) must be taken into consideration to ensure patients' satisfaction when they are

undergoing infertility treatment<sup>15</sup>. Patients' wives comment and opinion regarding the methods are also important to take note of. However it was not included into this study.

With the availability of a special room at our infertility centre, couples who are living far away who wished to obtain the specimen using coitus interruptus will be able to do so, instead of having the only option of masturbation.

Apart from lack of randomization and small sample size, other limitations of this study include the fact that the majority of our patients were Malays, all of whom were Muslims. This could affect the result especially when patients' preferences of the two methods were considered. Ideally, a multicentre randomized study with mixed ethnicity in equal proportion would give a much better result.

### CONCLUSION

Our results are encouraging for patients who due to various reasons wish to use coitus interruptus instead of masturbation for seminal fluid collection prior to IUI, as both methods are shown to produce sperms which are not different statistically in terms of quality.

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