Journal of Reproduction & Contraception
2015 Sep.; 26(3):131-134
doi: 10.7669/j.issn.1001-7844.2015.03.0131
E-mail: randc_journal@163.com

• ORIGINAL PAPER •

Evaluation on sperm parameters of ejaculates with hyperspermia

Yue-juan ZHANG[1], Jian ZHONG[1], Wei-jie ZHU[2]

1. Department of New Medicine, the First Affiliated Hospital, Jinan University, Guangzhou 510630, China

2. Department of Developmental and Regenerative Biology, College of Life Science and Technology, Jinan University, Guangzhou 510632, China

Objective *To investigate sperm parameters of ejaculates with hyperspermia.*

Methods *One hundred and thirty-three ejaculates with hyperspermia (semen volume >6 ml) were divided into three groups: group A, n=66, semen volume 6.0–6.9 ml; group B, n=63, semen volume >7.0 ml; group C, n=4, semen volume >6.0 ml, no sperm in the ejaculates. Sperm motility, count, and morphology were determined according to the World Health Organization Laboratory Manual (2010).*

Results *Of the 133 ejaculates studied, the largest volume was 10.8 ml. Most samples with hyperspermia had normal conventional sperm parameters. No differences were found on sperm motility and abnormal morphology rate between groups A and B (P> 0.05). In addition, no differences were also found on incidences of low motility, low sperm count, high abnormal morphology, and white blood cell (WBC) positivity between groups A and B (P>0.05). However, sperm count in group B was significantly lower than that in group A (P<0.05). Ejaculates in group C had no WBC positivity.*

Conclusion *Hyperspermia could have multiple forms for sperm parameters including good or poor status. Increasing seminal volume could not influence sperm parameters except for sperm count.*

Key words: semen volume; hyperspermia; sperm; sperm count; male infertility

Semen volume is one of semen parameters that can reflect semen quality in certain degree and is associated with the secretion of accessory sex glands[1-3]. In previous literature and the World Health Organization (WHO) laboratory manual (4th edition, 1999)[1-4],

Corresponding author: Wei-jie Zhu; Tel: +86-20-85225718; E-mail: tzhuwj@jnu.edu.cn

the normal range of semen volume produced by masturbation after 2−7 d of abstinence is between 2.0 ml and 6.0 ml. Larger volumes (>6.0 ml) are described as hyperspermic[1-3]. In the new WHO manual (5th edition, 2010)[5], the upper reference limit value of semen volume is not included in its guidelines. On the other hand, from clinical viewpoint, hyperspermia is as one of semen types, its sperm status still needs further evaluation. In the present study, sperm parameters from ejaculates with hyperspermia were determined in order to provide more information on this semen type and aid better understanding certain causes of male infertility.

Materials & Methods

Semen samples

Semen samples were produced by masturbation after 3−7 d of sexual abstinence. One hundred and thirty-three ejaculates with hyperspermia, semen volume more than 6 ml, were obtained from 133 men who visited the infertility clinic at the First Affiliated Hospital of Jinan University. Age and infertility durations for these males were 23−41 years and 1−4 years, respectively. Totally 133 ejaculates were divided into three groups: group A, n=66, semen volume 6.0−6.9 ml; group B, n=63, semen volume >7.0 ml; group C, n=4, semen volume >6.0 ml, no sperm in the ejaculates. Sperm motility, count, and morphology were determined according to the WHO manual[5]. The modified Papanicolaou-staining method was used to stain sperm smear to analyze sperm morphology.

Statistical analysis

The results were expressed as mean ± standard deviation ($\bar{x} \pm s$) or percentage (%). Difference between two groups was evaluated by t-test or χ^2 test. A difference with P<0.05 was considered significant. Statistical analysis was performed using SPSS for Windows Version 16.0.

Results

Of the 133 ejaculates studied, the largest volume was 10.8 ml. Sperm parameters for three groups are shown in Table 1. No differences were found on sperm motility and abnormal morphology rate between groups A and B (P>0.05). However, sperm count in group B was significantly lower than that in group A (P<0.05). According to the WHO criteria (2010), incidences of the lower reference limit for sperm motility, count, and morphology in groups A and B are shown in Table 2. No differences were found on incidences of low motility, low sperm count, high abnormal morphology, and white blood cell (WBC) positivity between groups A and B (P>0.05). Ejaculates in group C had no WBC positivity.