Table S1. Characteristics of fresh ejaculates which were collected from patients for conventional IVF treatments A

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Identifying marks of IVF patients | Volume of ejaculate (ml) | Sperm concentration (×106/ml) | Sperm motility (%) | Morphologically abnormal sperm (%) | Leukocyte concentration (×106/ml) |
| a | 2.2 | 126.5 | 40.7 | 94.5 | 3.1 |
| b1B | 2.5 | 158.0 | 43.0 | 65.8 | 0.6 |
| b2B | 3.9 | 188.0 | 69.1 | 84.0 | 0.1 |
| c | 2.0 | 139.0 | 64.7 | 81.3 | 0.9 |
| d | 3.2 | 218.0 | 62.8 | 60.9 | 0.2 |
| e | 2.8 | 46.0 | 58.7 | 65.2 | 0.4 |
| f1B | 2.8 | 145.0 | 67.6 | 72.4 | 0.4 |
| f2B | 3.4 | 95.0 | 61.1 | 63.2 | 0.7 |
| g | 3.4 | 106.5 | 27.7 | 98.1 | 0.9 |
| h | 4.1 | 82.5 | 31.5 | 96.4 | 0.8 |
| i | 2.0 | 105.0 | 48.5 | 80.9 | 0.4 |
| Average | 2.9 | 128.1 | 52.3 | 78.4 | 0.8 |

A Fresh ejaculates were collected from the patients by masturbation after 3-5 days of abstinence.

B The conventional IVF treatments were made twice for patient b (b1 and b2, the first and second treatments, respectively) and patient f (f1 and f2, the first and second treatments, respectively).

Table S2. Characteristics of fresh ejaculates which were collected from healthy fertile volunteers A

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Identifying marks of fertile male volunteers | Volume of ejaculate (ml) | Sperm concentration (×106/ml) | Sperm motility (%) | Morphologically abnormal sperm (%) | Leukocyte concentration (×106/ml) |
| j | 1.1 | 108.0 | 86.1 | 82.5 | 2.8 |
| k | 3.5 | 86.5 | 39.8 | 71.1 | 0.4 |
| l | 2.1 | 121.0 | 76.0 | 80.2 | 0.1 |
| m | 1.6 | 148.0 | 62.8 | 79.1 | 0.3 |
| n | 1.6 | 93.5 | 42.2 | 84.0 | 0.6 |
| o | 3.2 | 88.0 | 64.7 | 81.9 | 0.2 |
| p | 2.0 | 94.0 | 82.9 | 70.3 | 0.1 |
| Average | 2.2 | 105.6 | 64.9 | 78.4 | 0.6 |
| Vs patients a-i | P>0.05 | P>0.05 | P>0.05 | P>0.05 | P>0.05 |

A Fresh ejaculates were collected from fertile male volunteers by masturbation after 3-5 days of abstinence. Each of fertile male volunteers has 2-4 biological children. The periods since the last birth of the baby were between 0.5 and 17 years.

Table S3. Characteristics of ejaculated spermatozoa of IVF patients which were collected for conventional IVF treatments by swim-up method A

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Identifying marks of IVF patients | Volume of sperm suspension (ml) | Sperm concentration (×106/ml) | Sperm motility (%) | Morphologically abnormal sperm (%) | Leukocyte concentration (×106/ml) |
| a | 0.5 | 20.0 | 99.5 | 79.0 | 0.0 |
| b1A | 0.5 | 40.0 | 100.0 | 91.0 | 0.0 |
| b2A | 0.5 | 20.1 | 99.5 | 93.0 | 0.0 |
| c | 0.5 | 10.0 | 100.0 | 94.0 | 0.0 |
| d | 0.5 | 15.0 | 100.0 | 84.0 | 0.0 |
| e | 0.5 | 6.0 | 96.7 | 93.0 | 0.0 |
| f1A | 0.5 | 60.1 | 99.8 | 89.0 | 0.0 |
| f2A | 0.5 | 63.0 | 96.8 | 89.0 | 0.0 |
| g | 0.5 | 10.0 | 100.0 | 93.0 | 0.0 |
| h | 0.5 | 20.0 | 95.0 | 80.0 | 0.0 |
| i | 0.5 | 18.0 | 100.0 | 80.9 | 0.0 |
| Average | 0.5 | 25.7 | 98.8 | 87.8 | 0.0 |

A The conventional IVF treatments were made twice for patient b (b1 and b2, the first and second treatments, respectively) and patient f (f1 and f2, the first and second treatments, respectively).

Table S4. Characteristics of ejaculated spermatozoa of healthy fertile volunteers collected by swim-up method

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Identifying marks of fertile male volunteers | Volume of ejaculate (ml) | Sperm concentration (×106/ml) | Sperm motility (%) | Morphologically abnormal sperm (%) | Leukocyte concentration (×106/ml) |
| j | 0.5 | 35.0 | 100 | 65.8 | 0.0 |
| k | 0.5 | 36.0 | 100 | 52.8 | 0.0 |
| l | 0.5 | 78.5 | 100 | 73.3 | 0.0 |
| m | 0.5 | 16.0 | 100 | 62.5 | 0.0 |
| n | 0.5 | 64.0 | 100 | 76.6 | 0.0 |
| o | 0.5 | 82.0 | 100 | 69.6 | 0.0 |
| p | 0.5 | 65.0 | 100 | 69.3 | 0.0 |
| Average | 0.5 | 53.8 | 100.0 | 67.1 | 0.0 |
| Vs patients a-i | NA | P<0.05 | P<0.05 | P<0.01 | NA |

NA: Not analysed