Table EV1. Clinical diagnosis of the infertile patients

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| --- | --- | --- | --- | --- |
| 　 | Normal range | Units | IV-1 | IV-2 |
| Age of patients | 　 | 　 | 49 | 36 |
| Years of marriages | 　 | 　 | 16 and 03 | 4 |
| **Semen Parameters** | 　 | 　 | 　 | 　 |
| Semen Volume | > 1.4 | ml | 3.0 | 1.5 |
| Semen pH | Alkaline | 　 | Alkaline | Alkaline |
| Sperm Concentration (x 106/ml) | > 39 | ml | 40 | 60 |
| Morphologically normal sperm | > 4 | (%) | 25 | 10 |
| Motility (a+b+c) | > 40 | (%) | 45 | 30 |
| Progressive motility (a+b) | > 32 | (%) | 15 | 2 |
|  Rapid progressive (WHO a) |  | (%) | 5 | 0 |
|  Slow progressive (WHO b) | 　 | (%) | 10 | 2 |
|  Non progressive (WHO c) | 　 | (%) | 30 | 28 |
|  Immotile (WHO d) | 　 | (%) | 55 | 70 |