

## Chromosomal Anomalies in Patients with Azoospermia and Oligoasthenoteratozoospermia

J. Vijayalakshmi<sup>1</sup>, P. Venkatchalam<sup>1</sup>, Solomon F.D. Paul<sup>1</sup>, G. Usha Rani<sup>2</sup>, P. Kumarasamy<sup>3</sup>, and Jayam Kannan<sup>4</sup>

<sup>1</sup> *Department of Human Genetics, <sup>2</sup>Department of Obstetrics & Gynecology, Sri Ramachandra University, Porur, Chennai, Tamil Nadu, India*

<sup>3</sup> *Department of Animal Genetics and Breeding, Madras Veterinary College, Vepery, Chennai 600 007, Tamil Nadu, India*

<sup>4</sup> *Reproduction and Managing Director, Garbba Rakshambigai Fertility Centre (P) Ltd. Chennai 600 024, Tamil Nadu, India*

**KEYWORDS** Cytogenetics. Chromosome Aberrations. Male Infertility. Azoospermia. Oligoasthenoteratozoospermia.

**ABSTRACT** Male factor accounts for infertility in 10% of couples of reproductive age worldwide and is treatable in many cases. The etiology of male infertility is complex and may include anatomical problems, imbalance in levels of gonadal steroids and gonadotropic hormones, and genetic causes. It is demonstrated that infertile men have an increased frequency of chromosome abnormalities and gene disorders that make a significant contribution to male infertility. The aim of this study is to investigate the contribution of chromosomal abnormalities in patients with abnormal spermatozoa. Each infertile male referred with sperm count less than  $5 \times 10^6$ /ml and increased abnormal sperm morphology. This study included 150 infertile males diagnosed to have azoospermia (AZF) (n=125), oligoasthenozoospermia (OAT) (n=22), severe oligoasthenozoospermia (SOAT) (n=2), and globozoospermia (n=1). Chromosomal abnormalities were detected in 5 (3.3%) and polymorphisms in 11 (7.3%) patients. Chromosomal abnormalities include sex chromosome aneuploidy (Klinefelter syndrome, 47,XXY), Robertsonian translocation [45,XY,t(13;14)(q10;10)], and a deletion, 46,X,del(Y)(q11.2). Polymorphisms included a pericentric inversion on chromosome 9 and increase in the length of heterochromatic segments - 1qh+, 9qh+, 15p+, 21p+, 22p+ and Yqh+.