

## Cytogenetic Study of Spontaneous Abortion

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Sir - It has been estimated that 25-40% or more pregnancies end in spontaneous abortions and that at least 80% happened in the first trimester<sup>1</sup>. There are many causes of spontaneous abortion, but it is now known that about 60% of abortuses expelled spontaneously in the first trimester are chromosomally abnormal<sup>2</sup>. The types of chromosomal abnormality usually found in abortuses are autosomal trisomy, monosomy X, triploidy, tetraploidy, structural abnormality and mosaic<sup>3</sup>.

We analyzed 39 samples of POC (obtained from first trimester spontaneous abortions) to determine the frequency of chromosomal abnormality. All samples were cultured and harvested using the standard cytogenetic techniques<sup>4,5</sup>. Trypsin-Giemsa banding was used for chromosome identification<sup>6</sup>. For each sample, a total of 20 metaphases were screened, eight were photographed and karyotyped before a diagnosis was made.

Results of chromosomal analysis of those samples (n=39) showed that 20 were normal (16 males and 4 females) and 19 were abnormal. Among the abnormal karyotypes, six cases were monosomy, five cases were mosaic, four cases were trisomy and the rest consist of double trisomies, double monosomies and structural

abnormalities. Our results also revealed that among the monosomies, monosomy-X was the most frequently encountered abnormality. Among the cases of trisomy, trisomy of chromosome 9 was found in 3 cases. Reports from other studies showed that trisomy of chromosome 9 and 10 are rare, only 1.9% and 1.6% respectively<sup>7</sup>. Double trisomies are very rare and only one such case was found in the present report. In addition, double trisomies were never reported in livebirths, indicating that it is not compatible with life.

It has been reported by various studies that advanced maternal age is associated with trisomic acrocentric chromosomes in abortuses while lower maternal age is associated with the incidence of monosomy-X in abortuses<sup>1,2,8</sup>. Data from our report shows that a mean maternal age of 18.6 years for monosomy-X conceptuses was significant ( $p < 0.05$ ) when compared with karyotypically normal group. On the other hand, maternal age of 30.3 years for trisomy conceptuses was not significant when compared with karyotypically normal group. Structural abnormalities are more common in livebirths than in spontaneous abortions<sup>3</sup>. In this report, there was only one case of structural abnormality which involved a female karyotype POC with deletion of the long arm of chromosome 11.

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