FMR1 gene mediated genotype and phenotype variation in POF and developmental delay Patients

Establishment of TP-PCR methodology was done for the molecular characterization of CGG repeat size at FMR1 gene. This was achieved by carrying out molecular analysis of FMR1 in archived previously genotyped samples. The results obtained by molecular genotyping were found to be in agreement with the previously reported ones. Furthermore, this protocol was applied as a molecular screening method for patient service at our centre. Currently this test is utilized to provide diagnosis for both clinical suspects of FXS and also for prenatal samples at a cost as cheap as possible compared to other laboratories thus illustrating the practical utility of this method. The preliminary data on GZ and PM carrier frequency among reproductive age women and the POI women cohort was documented in this study. Screening of 500 women of reproductive age and 200 subjects with POI/POF identified 2 (0.4%) asymptomatic PM carrier women in reproductive age and 7 (3.5%) PM carriers women in POI/POF cohort. The percentagprevalence of PM is found to be significantly higher in the POI/POF cohort than the reproductive age women cohort as reported in other studies. Though statistically insignificant, a higher frequency of GZ in the POI/POF cohort was noted i.e. 2.5% (5/200) in comparison to that of 1.6% (8/500) in the reproductive age women. Such findings were also observed in previous studies done in other populations. A study on larger sample size may provide more concrete links between the POI and CGG repeat size in GZ range. These results suggeste that the molecular FMR1 screening of both reproductive age women and POF/POI women is equally important for identifying carrier in order to curtail the occurrence of FXS which is a debilitating incurable intellectual disability in the society. TP-PCR mediated molecular analysis of 233 Indian ID/DD subjects identified a percent prevalence of 7.7% of FXS subjects among ID/DD cases of unknown aetiology. The observed FXS frequency in this study is comparable with earlier studies done in Indian cases. Current study was fruitful in facilitating an early diagnosis in 66.7% of FXS positive subjects (<10 years of age) leading to timely initiation of supportive interventions and proper management of this disorder. Genetic counselling and extended Family screening was provided to the proband's relatives
and resulted in detection of potent asymptomatic carriers who are at elevated risk of givi
Gaining knowledge of the carrier status 4 out of 5 at risk individuals from distinct proband's f
diagnosis. This study successfully identified both the size and methylation mosaics of FXS ar
and the family members screened. These individuals showed variable phenotype with marke
of them found to be seemingly normal. Among the 25 FM males (18 FM males from initial s
from family screening) detected 4 (16%) were found to be mosaics. Such cases can be identifi
based methodologies as opposed to conventional PCR and has an important role in gaining i
and also in assigning the intervention service that might be useful in combatting health ailmen
forward the stigma associated with FXS that prevented many to opt for advanced medical car
to educate and implement such screening procedures at the primary health centre level for s
this debilitating disorder in the Indian scenario.