Abstract

Antisocial aggression in human is a widespread social problem. Aggression is considered as a positive symptom in many neuropsychiatric disorders. Genetic predispositions to violence, alcoholism, antisocial personality disorder, and other associated traits in criminal trials has been attributed to a genetic basis, but specific genotyping evidence has been introduced on an extremely limited basis. The human aggression and violence is extant in genes and inherits in the future progenies. There is strong evidence that genes play a significant role in antisocial behavior and aggression.

Several candidate genes have been investigated to have a relationship with impulsive aggression. These may belong to different type, i.e. serotonin-associated genes, catecholamine-associated genes, and neuromodulator-associated genes.

Monoamine oxidase gene encodes a mitochondrial enzyme that uses Flavin as a coenzyme and is involved in the degradation of numerous different biological amines and some neurotransmitters like serotonin, norepinephrine, and dopamine. *Homo sapiens* and other mammals express two types of monoamine oxidase isozymes with distinctive substrate specificities: *MAOA*, which specifically deaminates serotonin and norepinephrine, and *MAOB* that degrade phenylethylamines and benzylamine. *MAOA* and *MAOB* genes, seems imitative from the similar ancestral gene and consist of 15 exons with matching intron-exon sequence.

The *MAOA* gene is located on the short arm of X chromosome (Xp11.23) and a polymorphism have been reported in the gene. Two polymorphic forms of the *MAOA* gene have great attention while considering their functional importance. Beaver's have shown that the 2R varianthasarobustassociation with violent behaviors, arr est, and incarceration. The researchers have also discovered that African American males carrying 2R were more likely to be involved in extreme violence, shooting and stabbing than African American men with other *MAOA* variants.

This study was carried out to investigate allelic frequency in Baluchi and Pathan population, a first step in interpreting the aggression levels in Pakistani Populations with reference to the results reported in literature in different abnormal populations belonging to defenders and psychiatric patients. The blood samples were taken from both Baluchi and Pathan population. Fifty blood samples from each ethnic group were collected. The DNA was isolated by using isoamyl alcohol method. The PCR was done to amplify *MAOA* gene. Then the amplified samples were run through gel electrophoresis. The results show that number of repeats in majority of samples were 3R and 4R when run against the reference. A supplementary infrequent fifth allele (2 30-bp repeats) was not identified in both populations. In future it would help for inspecting the relationship of *MAOA gene* in diverse population.