I3 47, XYY Karyotype and Deviance: A Case Report

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After attending this presentation, attendees will be able to discuss the influence of genetics on criminal behavior and will understand how to approach a case of psychiatric evaluation on a subject affected by a chromosomal abnormality.

This presentation will impact the forensic science community by demonstrating how clinical evaluation can promote accurate and complete knowledge of an individual.

The case report concerns a young Italian man afflicted by Borderline Personality Disorder and Jacobs' Syndrome, which consists of a 47,XYY karyotype. The additional Y-chromosome derives from paternal meiosis II non-disjunction or postzygotic mitotic non-disjunction.

The prevalence of XYY Sex Chromosome Abnormalities (SCAs) in newborns is as high as 1:1000, but they are often unidentified because they are not necessarily associated with gross physical or cognitive impairments, and may never come to the attention of medical personnel. The only common and obvious features are high stature (greater than six feet) and a strong build.

The young man in this case report frequently exhibited violent behavior toward his relatives, and the court asked for an evaluation of his mental condition. Forensic psychiatrists expressed their opinions regarding his danger to society and criminal liability by analyzing the influences on his behavior from both his mental and genetic conditions. During the 1960s and the 1970s, some studies postulated that Jacobs' Syndrome can lead to aggressive behavior, but the statistical certainty of this association was questioned. Some experts hypothesized that these subjects' increased tendencies to commit crimes is not due to underlying aggression, but rather to associated intellectual deficits, since the presence of an additional Y-chromosome is related to cognitive disorders and deficits in intelligence. Other authorities hypothesized that these men are more easily recognized as offenders because of physical characteristics (e.g., high stature and stocky build), making them more identifiable.

More recent developments in genetics and neuroimaging have led to new publications on the relationship between the presence of an extra Y-chromosome and social function. According to the results of these studies, there is no significant evidence that people affected by Jacobs' Syndrome are necessarily antisocial or deviant. Such behaviors are indeed thought to have multifactorial etiologies, in which the genetic component may play some role, but should not be considered the sole cause.

Even today, there are differing opinions about the relevance of Jacobs' Syndrome in the forensic psychiatric assessment of societal danger and criminal liability, hence the importance of clinical evaluations and findings to promote an accurate and complete knowledge of individuals. This presentation concludes by reporting the accused's statements, revealing his personal feelings about the role his karyotype has played in influencing his criminal behaviour.

Jacobs' Syndrome, Genetics, Deviance

 ** Presenting Author*