

Microarrays: Wide Clinical Utilities and Advances in Healthcare

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Abstract : Advances in the field of genetics overwhelmed detecting large number of inherited disorders at the molecular level and directed to the development of innovative technologies. These innovations have led to gene sequencing, prenatal mutation detection, pre-implantation genetic diagnosis; population based carrier screening and genome wide analyses using microarrays. Microarrays are widely used in establishing clinical and diagnostic setup for genetic anomalies at a massive level, with the advent of cytoscan molecular karyotyping as a clinical utility card for detecting chromosomal aberrations with high coverage across the entire human genome. Unlike a regular karyotype that relies on the microscopic inspection of chromosomes, molecular karyotyping with cytoscan constructs virtual chromosomes based on the copy number analysis of DNA which improves its resolution by 100-fold. We have been investigating a large number of patients with Developmental Delay and Intellectual disability with this platform for establishing micro syndrome deletions and have detected number of novel CNV's in the Arabian population with the clinical relevance.

Keywords : microarrays, molecular karyotyping, developmental delay, genetics

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