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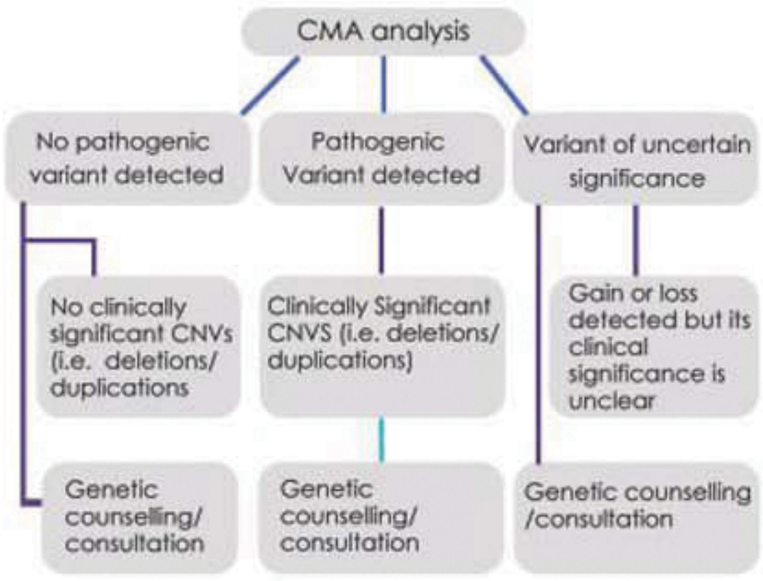
Chromosomal Microarray Testing



Test Sample requirements

EDTA Blood (2-3 ml)

CVS Sample; Amniotic Fluid/Cultured Cells

Extracted DNA

POC (product of conception)

Deliverables

Clinical report within 4-5 weeks

Pre-test and post test genetic counseling

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Special Features of our test

- >300k detection probes, High coverage density of >100kb in 396 pathological regions, > 20 % detection of lower mosaicism along with CNV and consanguinity detection.
- Advantages include precision testing and timely report delivery.

References

- Tse-Wen Chang, TW (1983). "Binding of cells to matrixes of distinct antibodies coated on solid surface". Journal of Immunological Methods.
- Array-based technology and recommendations for utilization in medical genetics practice for detection of chromosomal abnormalities Melanie Manning, Genetics in Medicine
- Dugas C, Slane VH. Miscarriage. [Updated 2021 Jun 29]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2021 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK532992/

About Greenarray

Greenarray is a molecular diagnostic laboratory. We offer diagnosis of infectious diseases, genetic testing and healthcare information to improve health and wellness. Our goal is to provide high quality affordable and accessible services.

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GA-0007/Dec/2021/500

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Chromosomal MicroArray

Early Screening, Effective Diagnosis

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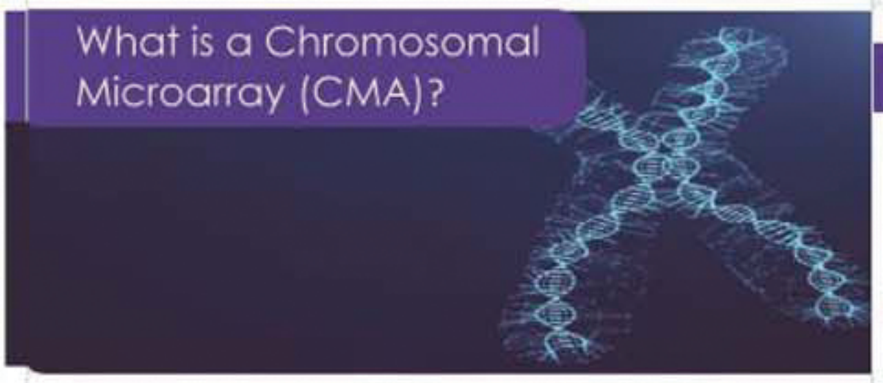
Human genetic material are packed into small thread like subunits called chromosomes. Chromosomes contain protein and DNA organised into genes. A chromosome carries genetic information from one generation to another. They play a vital role in cell division, heredity, variation, mutation, repair and regeneration.

These chromosome have their own genetic combinations and the slightest change in their combinations either addition, deletion, or an translocation (exchange) can result in birth defects and other health issues. When genes are missing, it can cause errors in development, because some of the " instructions" required, are missing.

The Chromosomal MicroArray is a high-resolution genetic test that screens for such changes in the chromosomal combinations that may otherwise go undetected.

What is a Chromosomal Microarray (CMA)?



- Chromosomal microarray analysis (CMA) is a microchip based testing platform for the detection of clinically-significant errors in gene structure, like microdeletions (absent genes) or duplications (doubling of genes), with a high sensitivity for submicroscopic aberrations (changes in structure and number).
- Well suited for detection of interstitial duplications, subtelomeric deletions/duplications and small copy number variations, resulting in physical or intellectual consequences which cannot be detected by routine methods like FISH.
- CMA technique is much more sensitive than karyotyping, which so far has been the most commonly used method.

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Which all conditions can CMA detect?

Microdeletions and microduplications of chromosome segments

Chromosomal Aneuploidy (trisomy, monosomy, etc.)

Unbalanced rearrangements of chromosome structure (translocations, etc.)

When is the test recommended?

Fetal abnormalities in ultrasound scan

Abnormalities in maternal serum screening (mother's blood tests)

Family history of genetic abnormalities

Miscarriage and Spontaneous abortion

Still birth

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CMA testing is often recommended in miscarriages.

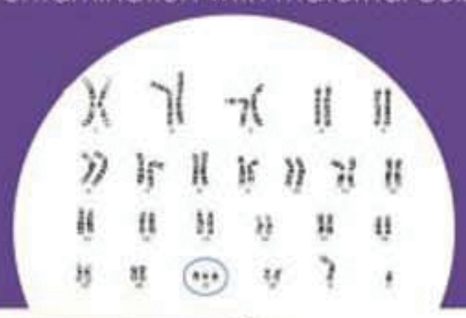
Genetic analysis of samples collected from pregnancy losses are necessary to identify the cause etiology and ensure appropriate advice and guidance to the couple undergoing treatment.

1st Trimester is associated with the highest risk for miscarriage

26% of pregnancies result in miscarriage

50% of the first trimester pregnancy loss are due to chromosomal abnormalities

Karyotyping has been the standard procedure but it has certain limitations while identifying small aberration (Copy number variation) and it often yields no result due to cell culture failure and contamination with maternal cells.



Why choose CMA ?

Karyotyping	CMA
• Cell culturing is required	• Cell culturing is not required
• High rate of misdiagnosis as it cannot detect maternal contamination	• Rules out misdiagnosis as it can detect maternal contamination
• Does not detect smaller aberrations	• Can detect large and small aberrations as well as variants of unknown significance
• Low resolution	• High resolution