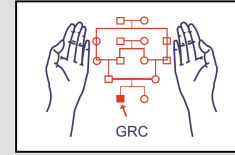# Cytogenetics

Genetics Resource Centre (GRC)

Cytogenetics is an analytical technique by which the chromosomes in a cell can be visualized under the microscope. The chromosomes are counted in number and then the individual chromosomes are examined for any morphological abnormalities. Cytogenetics can also be used for Fluorescent In Situ Hybridization (FISH) in which the chromosomes are visualized after staining with fluorescent labeled genetic probes.

Cytogenetics can provide very useful information about:

1. Constitutional abnormalities like Downs syndrome, Turner syndrome, Klinefelter syndrome, Patau syndrome and Edwards syndrome etc.

2. Prenatal diagnosis of constitutional abnormalities.

3. Cause of repeated miscarriages.

4. Cause of infertility.

5. Diagnosis and follow-up of haematological malignances.

What sample and precautions are required for cytogenetics?

Cytogenetics can be done on peripheral blood or bone marrow samples. The sample must be collected under strict aseptic conditions. The sample is collected in special sterile tubes containing sodium heparin as anticoagulant.

Can the sample for cytogenetics be sent to GRC from another place?

Yes the sample can be sent to us from any place provided all precautions are taken in its collection and the sample reaches us within 24 hours of collection. Since the test involves cell culture the chances of success decrease with increasing delay in transportation of the sample. Exposure to extremes of temperature during transportation may also decrease the chances of success.

What is the reporting time of cytogenetic analysis?

Cytogenetics involves culture of blood cells that is often slow and time consuming. The cell culture is followed by complicated lab processing that is also slow. Therefore the reporting time of cytogenetic analysis is at least a couple of weeks.

Are there any limitations in the test?

Culture failure is the most frequent cause of delay in reporting. In case of culture failure we often require a fresh sample.

Prenatal Diagnosis of Trisomies, www.grcpk.com