BioMed Research International

Special Issue on

Laboratory Genetic Testing in Clinical Practice 2016

CALL FOR PAPERS

Recent advances in laboratory genetics had a substantial impact on the diagnostic and prognostic evaluation of the human diseases in the clinical genetics laboratory. Novel clinical genomics methods, such as next generation sequencing and chromosomal microarray analysis, have provided important insights into the underlying basis of rare Mendelian diseases as well as common multifactorial diseases. Although novel clinical genomics methods are powerful diagnostic tools, they have not entirely replaced the traditional laboratory techniques such as karyotype analysis by cytogenetics, FISH analysis by molecular cytogenetics, and classical molecular genetic analysis methods (e.g., Sanger DNA sequence analysis, polymerase chain reaction, strip tests, DHPLC, and MLPA). Traditional testing methodologies still have a role in the clinical laboratory, depending on the test indication.

Understanding the practical use of the aforementioned genetic testing methods and the proper interpretation of the generated test results become a necessity not only for medical geneticists but also for other specialists as well. Furthermore, in the clinical practice, physicians need to order the most suitable genetic test in the right time for the right indication to prevent under- or overutilization of those tests. Therefore, a medical source, which provides essential updated information on novel clinical genomics methods in combination with traditional genetic assays and their potential use in clinical practice and research, is of paramount importance to the medical community. This special issue aims to provide updated information about the scientific advances and traditional genetic assays in the field of laboratory genetics for physicians and researchers, which will improve their knowledge, attitudes, and practices regarding genetic testing.

Potential topics include, but are not limited to:

- Cytogenetics
- Fluorescence in situ hybridization
- DNA sequence analysis
- PCR
- Strip assay
- Denaturing high-performance liquid chromatography
- Methylation analysis
- Multiplex ligation-dependent probe amplification
- Microarray
- Next generation sequencing
- Approach to MR/MCA patients
- Genetic testing in cancer
- Genetic testing in complex diseases
- Genetic testing in single gene disorders
- Genetic testing in mitochondrial diseases
- Revealing epigenetic mechanisms
- Appropriate genetic testing strategies

Authors can submit their manuscripts via the Manuscript Tracking System at http://mts.hindawi.com/submit/journals/bmri/genetics/gtcp16/.

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