Reliance Life Sciences launches portal for breast cancer genomics

Our Bureau, Bangalore

THE Molecular Medicine Group of Reliance Life Sciences has developed a portal, to help the medical fraternity predict familial and/or early on-set breast cancer in Indian women.

Breast cancer constitutes 18.5 per cent of the total new cancer cases in Indian women today. The ReliBRCA portal aims to make data generated by the scientific community easily accessible to doctors and oncologists, to help identify hotspots and targets for easy intervention for 'Predictive Diagnosis' and possibly in 'Prognosis and Therapy'.

The portal will include 'published data' and 'to be published data' defining 'Mutations' and 'Single Nucleotide Polymorphisms' (variations called SNPs) on BRCA1/BRCA2 genes, associated with increased susceptibility to Breast Cancer. The initiative is the first BRCA1/BRCA2 Mutation/SNP database in Indian women. The portal is launched with an initial report of 500 alterations. It is interactive and accessible to all, enabling submission and accrual of global inputs on BRCA1/BRCA2 mutations/SNPs in Indian women.

Breast Cancer is the most common malignancy affecting women worldwide. The peak occurrence of breast cancer in developed countries is above the age of 50 years, as compared to India, where it occurs in a younger age group, about a decade earlier then their western counterparts.

Approximately, 5-12 per cent of all breast cancers result due to genetic predisposition owing to inheritance of the dominant susceptibility genes BRCA1/BRCA2. In 1990, DNA linkage studies on large families with the above characteristics, identified the first susceptibility gene associated with breast cancer, named 'Breast Cancer 1' or BRCA1, located on chromosome 17. Since it was clear that not all breast cancer families were linked to BRCA1, studies continued and in 1994, another gene called BRCA2, located on chromosome 13, was identified. Both BRCA1 and BRCA2 are tumour suppressor genes that function in control of cell growth and cell death. Mutations in breast cancer susceptibility genes - BRCA1 and BRCA2, predispose women to breast and ovarian cancers. Besides, indicating an increased risk in development of breast cancer, most women with BRCA1 or BRCA2 mutations, develop early onset breast cancer at the relatively younger age of 25 - 40 years.

Mutations in the gene are transmitted in an autosomal dominant pattern in a family. The lifetime risk of developing breast cancer in BRCA1/BRCA2 mutation carriers is 85 percent, and ovarian cancers is 40 percent, as compared to lifetime risks of 12 percent in breast cancer and one per cent in ovarian cancer in women, with no mutations in BRCA1 and BRCA2 genes. Hence, a need for a comprehensive set of data for all mutations and single nucleotide polymorphisms (SNPs) in these genes. ◆

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