

PREVALENCE OF TP53 P.R337H MUTATION IN CASES OF BREAST PHYLLODES TUMOURS IN SOUTHERN BRAZIL

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BACKGROUND: Previous studies in Brazilian patients diagnosed with the core-cancers of Li-Fraumeni syndrome (LFS) and its variants (LFL) indicate that a particular germline mutation, TP53 p.R337H, may be highly prevalent and strongly associated with pediatric adrenocortical tumors in Southern Brazil. However, other tumours types, including breast cancer, have been observed in carriers, raising the possibility that the TP53 p.R337H mutation may also contribute to breast tumorigenesis. Breast phyllodes tumour, a very rare and aggressive breast neoplasia that accounts for less than 1% of all breast cancer cases, may be associated with LFS, and has suggested by some to be particularly frequent in TP53 mutation carriers. **METHODS:** Formalin fixed paraffin-embedded (FFPE) tumoral tissue of an unselected consecutive series of women diagnosed with benign and malignant phyllodes tumours between 2000 and 2010, was obtained from 7 Pathology Laboratories in Southern Brazil. Genomic DNA was isolated from FFPE. Genotyping was performed by qPCR using TaqMan technology and sequencing for confirmation in mutation-positive cases. **RESULTS:** Analysis of the first 48 cases included in the study (9 malignant, 3 borderline and 36 benign phyllodes tumors) resulted in identification of the TP53 p.R337H mutation in the germline of a 61 year-old patient with malignant phyllodes and a 38 year-old patient with a benign phyllodes tumor of the breast. **CONCLUSION:** Preliminary analysis of a case series of breast phyllodes tumors indicates that the germline mutation TP53 p.R337H may be particularly common in women with these tumors in Southern Brazil. Further analysis of the entire TP53 coding region and evaluation of the founder haplotype in the mutation-positive cases is ongoing. The identification of germline TP53 mutations in patients diagnosed with phyllodes tumors of the breast has important implications for disease management and in cancer risk counseling for these patients and families.