

## 00536 Clinical, Pathological and Loss of Heterozygosity (LOH) Differences in Wilms Tumours Between Asian and Non-asian Children

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**Aims:** Wilms tumour is the most common paediatric renal malignancy, and displays significant inter-ethnic, histological and outcome differences. Asian patients generally show better survival outcome compared to non-Asian patients, but the reasons remain unclear. We compared clinicopathological and survival outcome data, and loss of heterozygosity (LOH) profiles between Asian and non-Asian patients to determine their relevance as prognostic markers for risk stratification.

**Methodology:** We retrospectively reviewed clinical charts and histological slides of Asian and non-Asian Wilms tumour patients over a 20 year period. In addition, we used a PCR-based microsatellite profiling assay to screen correspondingly available formalin-fixed, paraffin-embedded (FFPE) specimens for 1p36 and 16q21-22 LOH, a marker of poor prognosis for favourable-histology Wilms tumour (FHWt).

**Result:** Of the 67 Wilms tumour cases, there were 53 (79.1%) Asian and 14 (20.9%) non-Asian patients. All Asian patients had unilateral tumours. They were younger at diagnosis as compared to non-Asian patients, (mean 4.0 and 4.6 years, respectively), had more proportionate gender distribution (female-male: 1.0 and 1.8, respectively), lower incidence of unfavourable histology tumours (4.2% and 25.0%, respectively, P=0.02) and less advanced disease at presentation, but similar nodal metastases rates (19.1% and 20.0%, respectively). Among available FFPE specimens from 30 Asian patients, 1p and 16q LOH was detected in 5 (16.7%) patients respectively – similar to rates reported in other ethnicities. Following similar National Wilms Tumour Study (NWTs) treatment regimens, Asian patients had superior 15-year event-free and overall survival (93% and 97%, respectively).

**Conclusion:** Asian patients had more favourable histology tumours, lower-stage disease and better survival outcomes despite similar 1p and 16q LOH and nodal metastases rates. These suggest no correlation between 1p and 16q LOH status with survival outcome among Asian patients, in contrast to Western literature, raising questions about 1p and 16q LOH as a risk stratification strategy in Asian children.