IS-2  Association between Her 2 expression and histological differentiation of Wilms tumor

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[Background/Purpose] Wilms tumor is a pediatric malignancy and it is one of the most frequently occurring solid tumors in children. Human epidermal growth factor receptors (HER) has been shown to play a critical role in the branching morphogenesis of renal tubules. In this study, we analyzed the expression of Her 2 in Wilms tumors and assessed the role of this gene in the tumorgenesis of Wilms tumors. [Material and Methods] During the period from 1969-2005, 40 patients with Wilms tumors were treated at Kyushu University hospital. The histological component of each Wilms tumor was classified into three categories (mesenchymal, blastemaL, epithelial) and we also analyzed the extent of Her 2 protein expression in all tumors. [Result] In the normal kidney, Her 2 showed a strong immunoreactivity along the cell membranes of the collecting tubules, a normal endothelial lining of the blood vessels and weak staining in the proximal and distal convoluted tubules. Epithelial differentiation in tumors was associated with diffuse staining. Among the 16 specimens revealing epithelial cells differentiation, 9 (56.25%) showed Her 2 immunoreactive in the epithelial cells. Immunoreactive blastemal cells were present in 10 (41%) of the 24 cases. In addition, only 3 (14.3%) of 21 specimens containing mesenchymal cells showed immunoreactivity. [Conclusion] These results suggest that the extent of Her 2 is considered to be associated with the differentiation of renal tissue. This sequence may therefore explain the oncogenesis of Wilms tumors by the standpoint of histological differentiation.