FZD7

The Wnt receptor Frizzled-7 (FZD7) promotes tumor progression and can be currently targeted by monoclonal antibody therapy. Schiffgens et al determined the prognostic value of FZD7 for the overall survival of glioblastoma (GBM) patients, both as individual marker and taken in combination with the previously-described markers MGMT and IDH1. Additionally, they tested whether these markers (alone or in combination) exhibited sex-specific differences.

High levels of FZD7 (FZD7high) associated with shorter survival in GBM patients; however, FZD7high was a significant predictor of poor survival only in male patients. Mutation of IDH1 significantly associated with longer survival in male but not female patients. Methylated MGMT promoter significantly associated with longer survival only in female patients. Combination of FZD7 with MGMT enhanced the prognostic accuracy and abrogated the sex differences observed upon single marker analysis. Combination of FZD7 with IDH1 was a significant predictor of survival in male GBM patients only.

Three independent cohorts of patients with primary GBM (n=120, n=108 and n=105, respectively) were included in this study. FZD7 and IDH1 were assessed by immunohistochemistry in tissue microarrays. MGMT promoter methylation was determined by methylation-specific polymerase chain reaction. Survival analysis was performed by Kaplan-Meier estimate, log-rank test and Cox proportional hazard regression.

The study identifies novel individual and combination markers with prognostic and, possibly, therapeutic relevance in GBM. Furthermore, our findings substantiate the importance of sexual dimorphism in this type of cancer [1].

1)
Schiffgens S, Wilkens L, Brandes AA, Meier T, Franceschi E, Ermani M, Hartmann C, Sandalcioglu IE, Dumitru CA. Sex-specific clinicopathological significance of novel (Frizzled-7) and established (MGMT, IDH1) biomarkers in glioblastoma. Oncotarget. 2016 Jul 7. doi: 10.18632/oncotarget.10465. [Epub ahead of print] PubMed PMID: 27409829.