Transforming growth factor beta 3

Ma et al., analyzed the expression of TGF-β3 at the mRNA level in 38 frozen meningioma samples. Clinical data collection, follow-up, correlations and survival analyses were performed.

WHO grade I meningiomas showed an average expression level of 2.55, which was higher than that of WHO grade II (average of 1.50) and WHO grade III (average of 0.21) (Kruskal-Wallis test, P=0.008). For meningiomas with history of surgery, the mean TGF-β3 expression level was 0.71, much lower than that of primary meningiomas with a mean value of 2.55 (Mann-Whitney U-test, P=0.008). According to the Kaplan-Meier analysis and univariate Cox analysis, WHO grade (P=0.001), history of surgery (P<0.001), tumor volume (P=0.045), preoperative KPS (Karnofsky Performance Status, P=0.001), peritumoral brain edema (P=0.039), postoperative radiotherapy (P=0.001), degree of resection (P=0.039) and TGF-β3 expression (P=0.038) were prognostic factors for tumor recurrence. In addition, WHO grade (P<0.001), history of surgery (P<0.001), preoperative KPS (P=0.002), peritumoral brain edema (P=0.006), postoperative radiotherapy (P=0.007), bone invasion (P=0.03) and TGF-β3 expression (P=0.041) were prognostic factors for mortality.

TGF-β3 expression levels gradually declined with the increase of WHO grade and were lower in recurrent meningiomas than in primary meningiomas. Besides, low TGF-β3 expression was found to predict tumor recurrence and mortality in meningiomas based on univariate analysis [1)].

1)
Ma J, Li D, Chen Y, Zhang Y, Song L, Tian K, Yang Y, Chen L, Weng J, Cao X, Hao S, Wang L, Wu Z, Zhang J. Low TGF-β3 expression predicts tumor malignancy in meningiomas. World Neurosurg. 2019 Jan 28. pii: S1878-8750(19)30175-5. doi: 10.1016/j.wneu.2019.01.077. [Epub ahead of print] PubMed PMID: 30703597.