Meningioma Pathogenesis

Tumorigenesis

Evidence suggests that female sex hormones play a role in the meningioma tumorigenesis. In particular, progesterone, has a receptor (PR) that is highly expressed in the majority of grade I meningiomas. Multiple meningiomas (diffuse meningiomatosis) are less frequent, but have a higher female predominance and a higher PR expression. They are, therefore, attractive candidates for anti-PR therapy.

Touat et al., treated three consecutive women with multiple meningiomas with mifepristone (RU 486). It is a synthetic steroid with high affinity for both progesterone and glucocorticoid receptors.

The treatment was well tolerated, and they observed an important and long-lasting clinical (3/3) and radiological response (2/3) or stabilisation. All the three patients are now stable after five to nine years of treatment.

These encouraging results strongly support a prospective clinical trial in this preselected population [1)].

Molecular pathogenesis

see Meningioma gene mutations

1)
Touat M, Lombardi G, Farina P, Kalamarides M, Sanson M. Successful treatment of multiple intracranial meningiomas with the antiprogesterone receptor agent mifepristone (RU486). Acta Neurochir (Wien). 2014 Oct;156(10):1831-5. doi: 10.1007/s00701-014-2188-4. Epub 2014 Jul 31. PubMed PMID: 25078073.