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IN BRIEF

NEURO-ONCOLOGY

Pregnancy might promote progression of high-grade gliomas

New evidence suggests that women with grade II or grade III gliomas have a higher risk of tumour progression during pregnancy. Yust-Katz and colleagues retrospectively identified 23 patients who became pregnant after being diagnosed with a primary brain tumour. In this group, five women with grade I tumours remained stable during pregnancy. The remaining 18 patients, who had grade II or grade III gliomas, demonstrated significant tumour progression during pregnancy, or during the 8 weeks after delivery. These findings raise the possibility that tumour biology is altered during pregnancy, and highlight the need for careful monitoring in oncology patients of childbearing age. The authors also identified 15 women who were diagnosed with glial tumours during pregnancy: two of these women underwent termination of their pregnancies, but the others went on to give birth to healthy babies.

Original article Yust-Katz, S. *et al.* Pregnancy and glial brain tumors. *Neuro Oncol.* doi:10.1093/neuonc/nou019

HUNTINGTON DISEASE

Possible cellular mechanism for striatal degeneration in Huntington disease

Huntington disease (HD) is associated with progressive degeneration of the striatum, but the cause of this cell death is unclear. Leitman and colleagues examined cultures of normal murine striatal cells, and similar cells that expressed the polyglutamine-expanded form of the huntingtin protein. Striatal cells were found to be particularly sensitive to chemicals that cause endoplasmic reticulum stress, and presence of the pathogenic huntingtin protein exacerbated this sensitivity. Huntingtin-expressing striatal neurons had higher levels of the protein phosphorylation factor eIF2α than did the normal cells. Administration of an eIF2α kinase inhibitor reduced neurotoxicity, and might, therefore, represent a target for future drug therapies for HD.

Original article Leitman, J. *et al.* ER stress-induced eIF2-alpha phosphorylation underlies sensitivity of striatal neurons to pathogenic huntingtin. *PLoS ONE* **9**, e90803 (2014)

NEURODEGENERATIVE DISEASE

Potential adverse effects of histone deactylase inhibition in spinocerebellar ataxia type 1

Histone deacetylase 3 (HDAC3) is implicated in spinocerebellar ataxia type 1, but new data from genetic knock-in mice reveal potential risks associated with the use of HDAC inhibitors in this disease. Venkatraman *et al*. crossbred mice with the polyglutamine expansion seen in spinocerebellar ataxia with a strain in which HDAC3 was genetically depleted, thereby producing a mouse model of HDAC inhibition in spinocerebellar ataxia. These mice demonstrated an exaggerated disease phenotype, including early-onset ataxia and progressive degeneration of cerebellar Purkinje cells, which require HDAC3 for normal function. The results of this experiment suggest that caution is warranted when considering the use of pharmacological HDAC inhibitors in any disease, as high doses might increase the risk of damaging the cerebellum.

Original article Venkatraman, A. *et al.* The histone deacetylase HDAC3 is essential for Purkinje cell function, potentially complicating the use of HDAC inhibitors in SCA1. *Hum. Mol. Genet.* doi:10.1093/hmg/ddu081