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IN BRIEF

MULTIPLE SCLEROSIS

Quadrivalent HPV vaccination does not increase risk of MS

A study of nearly 4 million women and girls in Scandinavia has revealed that receiving the quadrivalent vaccine against human papillomavirus (HPV) does not affect the risk of developing multiple sclerosis (MS). Comparing national health-care registries from Denmark and Sweden, Scheller and colleagues observed that the number of diagnoses for MS and other demyelinating diseases was approximately equal in the vaccinated and unvaccinated cohorts.

Original article Scheller, N. M. *et al.* Quadrivalent HPV vaccination and risk of multiple sclerosis and other demyelinating diseases of the central nervous system. *JAMA Neurol.* **313**, 54–61 (2015)

NEURODEGENERATIVE DISEASE

Crucial role for miR-219 in the development of tauopathies

New data suggest that the microRNA miR-219 is part of a vital regulatory mechanism that prevents the deposition of tau protein. Brain tissue from patients with Alzheimer disease (AD) or age-related tauopathy was found to have dramatically reduced levels of miR-219 relative to control brain tissue. Moreover, in transgenic *Drosophila* flies that express human tau, miR-219 reduced tau toxicity; in human neuroblastoma cell cultures, miR-219 inhibited outgrowth of tau-positive neurites. These results implicate miR-219 as a potential target for the treatment or prevention of AD and other tauopathies.

Original article Santa-Maria, I. *et al.* Dysregulation of microRNA-219 promotes neurodegeneration through post-transcriptional regulation of tau. *J. Clin. Invest.* doi:10.1172/JCI78421

NEURO-ONCOLOGY

Patients with low-grade gliomas respond well to proton-based radiotherapy

Proton-based radiotherapy might be an effective and well tolerated treatment option for patients with WHO grade II gliomas, according to new research. In a prospective phase II trial, 20 patients received proton therapy for 6 weeks. Overall survival at 5 years was 84%, and the investigators observed no decline in neurocognitive function, emotional well-being or quality of life, though a subset of patients developed neuroendocrine dysfunction. Randomized phase III trials are needed to directly compare proton and photon radiotherapies for glioma.

Original article Shih, H. A. *et al.* Proton therapy for low-grade gliomas: results from a prospective trial. *Cancer* doi:10.1002/cncr29237

NEURO-ONCOLOGY

Expression of miR-125a-3p is related to glioma malignancy

Low levels of miR-125a-3p are expressed in high-grade gliomas, suggesting an inverse relationship between this microRNA and tumour malignancy. In cultured glioblastoma cells, restoration of miR-125a-3p expression promoted apoptosis and inhibited proliferation. In mice, xenografts of glioblastoma cells high in miR-125a-3p had lower tumorigenicity than xenografts with low expression. Along with its target neuregulin 1, modulation of miR-125a-3p is a putative treatment mechanism for glioma.

Original article Yin, F. *et al.* MiR-125a-3p regulates glioma apoptosis and invasion by regulating Nrg1. *PLoS ONE* **10**, e0116759 (2015)