



Blog Posting – Neuropsychiatry(London)

Glaucoma is one of the most frequent causes of visual impairment worldwide and involves selective damage to retinal ganglion cells (RGCs) resulting in degeneration of neural pathways connecting retina to visual cortex. It is of interest that similarities in pathological changes have been described in Alzheimer's disease (AD), the most common cause of progressive memory loss and dementia in older people. Accumulation of amyloid-beta (A β) and hyperphosphorylated tau is thought to contribute to apoptotic neuronal death in Alzheimer's disease, and similar changes have been linked to apoptotic RGC death in glaucoma. Both glaucoma and Alzheimer's disease also suffer from a lack of effective treatments prompting a search for

novel therapeutic interventions. Neurosteroids (NSs) (including oxysterols) are endogenous molecules synthesized in the nervous system from cholesterol that can modulate glutamate and GABA receptors, the primary mediators of fast excitatory and inhibitory neurotransmission in the brain, respectively. Because changes in the glutamate and GABA neurotransmitter systems contribute to the pathogenesis of AD and glaucoma, NSs are possible therapeutic targets for these disorders. In this review, we present recent evidence supporting pathological links between Alzheimer's disease and glaucoma, and focus on the possible role of NSs in these diseases and how NSs might be developed for therapeutic purposes.