Action of low doses of aspirin in inflammation and oxidative stress induced by Aβ1-42 on astrocytes in primary culture

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Alzheimer's disease (AD) causes decline in memory and is the most common neurodegenerative disease implicated in the aging process (Lane *et al.* 2018). The prominent features of AD include amyloid plaques, intraneuronal tangles, cell death, inflammatory changes and oxidative stress (Perry *et al.* 2002; Selkoe *et al.* 2016). In this study, we were interested in exploring the action of aspirin in both inflammatory and ROS (reactive oxygen species) events associated with Alzheimer's disease (AD) by using the amyloid β1-42 in astrocytes in primary culture. Aspirin diminished pro-inflammatory mediators (IL-β and TNF-α) and NF-κB protein expression, increasing anti-inflammatory PPAR-γ protein expression, preventing Aβ1-42 toxic effects. Aspirin inhibited COX-2 and iNOS without changes in COX-1 expression, increasing antioxidant protein (Cu/Zn-SOD and Mn-SOD) expression in presence or absence of Aβ1-42. The key finding of our study, is that at low doses of aspirin a recovery of oxidative stress and inflammation, induced previously by Aβ1-42 toxic peptide on astrocytes in primary culture, was detected. This indicates that administration of low dose of aspirin to AD patients, could be more useful than high doses.

Biography

Constanza Aldasoro Sanchis, born in Valencia, 1989, graduated in Medicine by the Valencia School of Medicine at 2013, and obtaining her speciality as a Family and Communitarian doctor in 2019 by the General Universitarian (Universitary General) Hospital in (at) Castellon, Valencian community, Spain. So far, she has been involved in several projects and activities in the physiology laboratory at the University of Valencia, such as the publication of several articles in indexed medicine magazines such as Plos One, 2016, Int J Med Sc 2017 or Int J Biol. Sc 2019. At the time being, working on the obteinance of her PhD (MD) degree on Physiology on the effects of Ranolazine as a way to determine further uses in primary medicine.

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