Pain in Alzheimer's Disease: where do we stand?

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The brain has around 100 billion nerve cells (known as neurons) and each one links to many others to communicate. In addition, other specialized cells are found in the brain. These surveil and nourish other cells. They work like factories and each type has multiple responsabilities. Some are important in the process of thinking. Others get rid of waste.

In brains from Alzheimer's disease (AD) patients, deposits of beta-amyloid and tangles are present. These prevent parts of a cell's factory from running well. Cell communication and other important functions that cells need to survive are disrupted. Like a real factory, backups and breakdowns in one system cause problems in other areas. As damage spreads, cells lose their ability to do their job and die.

The presence of these damaged cells in pain-related areas has been noticed and can interfere with how these patients process pain. One of these areas is the Locus Coeruleus (LC). The LC extends axons that innervates most brain areas and the spinal cord. It is also involved in coordinating the response of the brain when facing a painful stimulus.

My work aims to investigate if there are changes in the LC in an AD mouse model and if these contribute to alterations in pain processing. By doing this, we are trying to contribute to a proper pain control in AD patients and, therefore, increase their quality of life.

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