Could glial cells in the brain hold the key to curing Alzheimer’s?

Alzheimer’s disease is known to be associated with extensive damage to brain cells (neurons) with shrinkage of the brain, development of plaques of protein between the cells and tangles of fibres inside the cells.

Research looking for ways to remove protein plaques has been unsuccessful in finding a cure. Medication can help with symptoms, such as memory loss, but there is no way to reverse or delay the underlying damage in this devastating disease.

Recent advances in genetic studies have shown that multiple genes are involved with the development of late-onset Alzheimer’s disease. Many of these genes do not influence the nerve cells themselves, but programme glial cells, which support and protect nerve cells.

Glia cells make up the white matter of the brain, which has been regarded as having limited importance. Astroglia are specialised glial cells that maintain levels of neurotransmitters and calcium, regulate the blood–brain barrier and provide nutritional support to the brain.

However, in Alzheimer’s disease their action changes and they start to be far more active causing inflammation and degeneration of neurons. This also happens in other neurological diseases, including multiple sclerosis and Parkinson’s disease.

The knowledge that glial cells can cause brain damage suggests that they should become more central in future research.


Care home nurses’ role in identifying frailty in older people

Frailty is a condition in which an individual experiences losses in one or more domains of human functioning – physical, psychological or social. It affects up to 50% of people aged over 85 years. A combination of age, genetic and environmental factors contribute to a decline in multiple body systems leading to vulnerability to sudden health status changes, often triggered by minor stress or illness.

Identification of frailty is important because it may be reversible by identifying contributing factors, such as delirium, falls, immobility, susceptibility to medication side effects and worsening incontinence.

There are assessment tools, such as the PRISMA-7 where a score of 3 in a 7-item questionnaire indicates frailty and other tools, which include the time needed to stand up, walk three metres, turn and return to the chair.

Malnutrition is common among frail older people, partly due to hormonal changes reducing appetite. Nurses can introduce supplements, ensure a comfortable eating environment and present food attractively in manageable portion sizes. Nurses can also provide exercise programmes that can help physical function and reduce agitation in people with dementia.

Up to 50% of older patients take more than four medications, which can lead to damaging side effects. Nurses can encourage medical reviews to help reduce inappropriate prescribing.