Alzheimer’s research chief orders shake-up after 20 years of failure

Jonathan Leake, Science Editor

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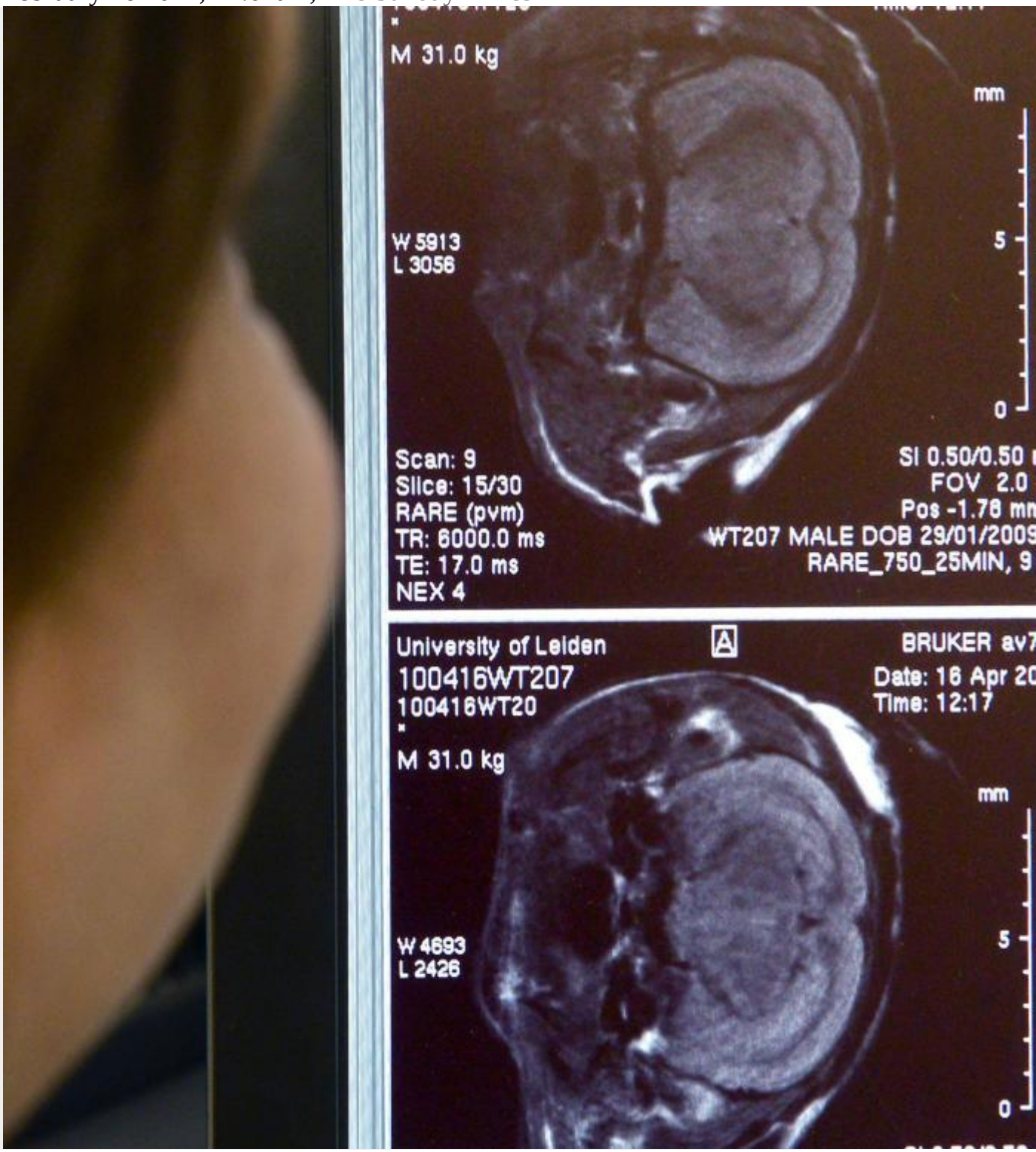

Several trials of therapies based on the ‘rogue proteins’ theory were declared a spectacular failure ALAMY

Research into Alzheimer’s, the killer disease afflicting hundreds of thousands of Britons, faces a shake-up after the scientist appointed to lead Britain’s research efforts said two decades of work had produced no effective therapies.

Bart De Strooper, the director of the new £250m Dementia Research Institute, said he wanted new treatments undergoing trials within five years — but that would happen only if researchers changed the way they thought about the disease.

“In the past we researchers have had too simplistic an approach to dementia,” said De Strooper. “But what is emerging is that these brain diseases are highly complex with many processes, not just one. We need to make our research more nuanced.

A husband and wife on living with dementia

“In five years’ time I would like to see half a dozen drugs in development and one or two being tested on patients.”

De Strooper, is a former head of the laboratory for the research of neurodegenerative diseases at Leuven University, Belgium. He was headhunted to run the new institute after publishing a research paper last year challenging the “amyloid hypothesis” that has dominated dementia research since the 1980s.

This is the idea that Alzheimer’s and many other dementias are triggered by the accumulation of two deformed proteins, amyloid and tau, which poison the brain cells or neurons.

The dominance of this theory means researchers have spent 20 years seeking drugs to remove the rogue proteins. Recently, however, several trials of these therapies were declared a spectacular failure. This month a drug called verubecestat became the latest such flop when Merck, its maker, halted trials after finding no benefit. The drug

joined Eli Lilly's solanezumab, whose failure was announced last November, and Roche's gantenerumab.

The need for a therapy is growing increasingly urgent. Dementia is the leading cause of death in England and Wales and costs the economy £24bn a year.

"We know that these proteins are involved in Alzheimer's and other dementias but they are only part of the picture," said De Strooper. "The evidence suggests that inflammation is another key factor in killing brain cells and we should be targeting that."

Other research suggests genetics are key. John Davis, chief scientist at Alzheimer's Research UK's Oxford drug discovery unit, said at least 20 rogue genes were linked with an elevated dementia risk. Several of those genes are implicated in the workings of microglia, the brain's immune cells, which are emerging as a key target for research.

Diego Gomez-Nicola, associate professor of neuroscience at Southampton University, said microglia played a central role in brain inflammation. "This is the beginning of a new era. The field has been narrowly focused on amyloid for years but it has turned out to be the wrong idea so we need to look elsewhere. We must learn from the failed trials and . . . follow new ideas more freely and not defend old ones."

The Dementia Research Institute is being set up with £150m of government funding plus £50m each from the Alzheimer's Society and Alzheimer's Research UK. University College London will be its hub but there will also be at least three other research centres with eight universities competing to house them.

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5 comments

Post comment

Keith in Cambridge
We have Dementia/Alzheimer's charities appealing for money and other support for their research. But there are similar charities and research projects in the US, Canada, Australia and, surely, in Europe, Japan and China.
Do they ever get together to pool their resources enthusiastically and generously? UK funding should, for example, go to a promising Canadian project and donations and grants money from Australia could support promising leads here.

Michael Dougherty
On the one hand it's to be hoped Alzheimer's Society and Alzheimer's Research UK are focused on the same goal. On the other, assuming they are, what's the logical reasoning for duplicate offices, personnel etc(?)

Caleb Boone
Dear Ladies and Gentlemen:
We have not yet begun to scratch the surface of the true etiology of this syndrome.
The brain is too complex.
We don't understand it yet.
Twenty possible genetic causes have been identified to date. Surely we will discover more.
Each patient's dementia is probably the result of a constellation of things.
We cannot identify, describe, diagnose and effectively treat any of them.
We are fumbling in the dark.
I note that nursing homes are building "Alzheimer's Wings."
We are supposed to be impressed with that.

Those are nothing more than intensive nursing care units.
But we don't know what we are caring for.
This diagnostic disaster has persisted for about fifty thousand years.
It is embarrassing to read Neurological Colloquia which are circular and nonsensical.
Someone needs to admit that we are completely lost and return to expensive, individual Psychiatric Clinical Diagnosis and expensive, individual Clinical Treatment.
There is no Bayer Aspirin for this headache.
Have a Dovely.
Sincerely yours,
Caleb Boone.

Chris Huckle
Thank you for that realistic appraisal. The realistic conclusion is that the only remedy in the foreseeable future is a one way easy jet ticket to Zurich and we'd better understand that before the NHS is overwhelmed.

X-Ray Girl
Thank you for the article, however it might have been better to have used MRI Brain images from an elderly patient to illustrate.