The Realisation of Research

Novel Method of Analysis of Stroke Data

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Category(s):
Diagnostic/Prognostic

Description:

Automated High-Dimensional Outcome Prediction in Stroke

Available For: Licensing

Summary

Stroke is the leading cause of adult disability in the UK at an estimated overall annual cost of £7 billion. Clinical outcomes in stroke are not improving as fast as conditions of similar aetiology. A major cause is the difficulty in providing targeted care in a patient group with such hugely diverse requirements.

UCL has developed a system for predicting clinical outcomes so as to provide advance information on the optical clinical management of each patient.

The Technology and its Advantages

Using magnetic resonance imaging (MRI), automated brain image analysis with high-dimensional machine-learning inference, exploits the fine scale functional specialisation of the brain, capturing the relation between the pattern of brain damage and clinical outcome at very high resolution. This approach permits much greater predictive power than is offered by current techniques which all rely on crude, global features and yet adds minimal resource overhead because it uses routinely acquired clinical data. To validate such a tool requires a dataset of brain images with matching independently verified clinical outcomes so that the predictions to be compared with the "ground truth". UCL has a dataset of >600 cases and to this existing retrospective data we will add 600 prospectively recruited cases over the next year, a number achievable given the predicted throughput of patients at the UCLH and Institute of Neurology stroke unit.

Market Opportunity

Stroke is the leading cause of adult long-term disability and the third leading cause of death in the industrialised world. Stroke is increasingly being managed much like a heart attack, with a high priority on restoring blood flow to the affected areas of the brain as rapidly as possible in the case of an ischemic stroke, and on stopping bleeding in the brain in the case of hemorrhagic stroke. However, the lack of markers make this impossible. Use of this technology will enable better prediction of patient outcome.

Intellectual Property Status

Database rights and diagnostic algorithm

Further Information

Please contact Derek Reay, Business Manager T:+44 (0)20 7679 9000 E: d.reay@uclb.com

For Information, Contact:

Derek Reay
Senior Business Manager
UCL Business PLC
d.reay@uclb.com

Inventors:

Parashkev Nachev

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