Alzheimer's detection – it's all in the blood

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A non-invasive and inexpensive method to detect neocortical amyloid-beta burden (NAB) – a predictor of Alzheimer's disease (AD) – is described in a study published this week in Molecular Psychiatry. The authors identify a blood biomarker based signature that could allow for wide population screening and early interventions aimed at slowing down disease progression. Clinical symptoms of AD are visible only after significant neurological damage has occurred, and the currently available methods to test for AD before this irreversible stage have limited use due to invasiveness and cost. To enable early identification of patients at risk of developing AD, Samantha Burnham, Noel Faux and colleagues – as part of the Australian Imaging and Biomarkers Lifestyle Study of Aging (AIBL) – measured the levels of biomarkers in the blood of patients with high NAB compared to those with low NAB.
The data collected was used to generate a model to predict NAB, which achieved a sensitivity of 80% and a specificity of 82%. Validation of the model using a different cohort yielded similar results. The levels of five biomarkers were significantly different between the groups, and although the significance of each is not known, several are related to immune system signalling, consistent with previous findings. These results could help in the development of a low-cost routine test, used as an economic screening tool for early detection of people at risk of developing AD. This test could provide justification for more invasive or costly tests, and allow earlier disease specific therapeutic interventions.

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