DRUG REPURPOSING FOR CEREBRAL SMALL VESSEL DISEASE AND VASCULAR COGNITIVE IMPAIRMENT: CURRENT EVIDENCE AND UNTAPPED POTENTIAL

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Drug repurposing – the set of strategies that identifies new therapeutic uses for known drugs or drug candidates – has been successfully applied to several categories of diseases with unmet therapeutic need, including some that are associated with vasculopathies. Given the unsatisfactory state of drug development for vascular dementia, drug repurposing might therefore offer particularly attractive possibilities; however this field has not been in the center of efforts. In this contribution we analyze how advanced drug repurposing technologies could be applied to identify potential candidate compounds for the pharmacological treatment of conditions such as cerebral small vessel disease, microbleeds, amyloid angiopathy, chronic hypoperfusion, and resulting conditions such as vascular cognitive impairment and dementia. We present a brief overview of current routes of investigation, suggest how these could be massively advanced by state-of-the art big data technologies, and what possibilities might exist beyond the known approaches.