

Drug repurposing in neurodegenerative disease: potential and pitfalls

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The pharmacologic pipeline of drugs in neurodegenerative diseases has been slow to propose new treatment in this disease area. Drug repurposing has much potential to identify new therapeutic options, alongside traditional routes of design and development, and can accelerate the identification of pharmacotherapy for persons with neurodegenerative diseases such as Alzheimer's disease. Developing a framework for drug repurposing is challenging, combining knowledge of pathology, pharmacology, pharmaceuticals, drug safety and evaluation of evidence. The aim of this framework is ultimately to identify drug candidates that have the potential to show clinical benefit in trials and subsequently be licensed for a new indication. One such framework to approach repurposing will be proposed. However, the drug repurposing route also has its share of pitfalls. These include limited evidence being available at the time of assessment. Ultimately, the evaluation of evidence and expert opinion indicating whether a drug is a good or bad candidate for repurposing is a nuanced process which must be developed ad hoc. This in itself can be considered a methodological limitation. However, in view of the difficulty in identifying new drugs for neurodegenerative diseases through traditional methods, repurposing must be taken seriously as an alternative, economical and feasible route to drug discovery, and optimized, to make the process of drug discovery more efficient.