Nanotechnology for Alzheimer disease

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Background: Alzheimer disease (AD) typically affects behavior, memory and thinking. The change in brain have been reported to begin approx. 10-20 years before the appearance of actual symptoms and diagnosis of AD. An early stage diagnosis and treatment of this lethal disease is the prime challenge, which is mainly halted by the lack of validated biomarkers. Method: Recent nanotechnological advancements have the potential to offer large scale effective diagnostic and therapeutic options. Targeted drug (e.g. Rivastigmine) delivery with the help of nanoparticles (NPs) in the range of 1-100 nm diameters can effectively cross the blood brain barrier with minimized side effects. Moreover, biocompatible nanomaterials with increased magnetic and optical properties can act as excellent alternative agents for an early diagnosis. With the high volume of research coming in support of the effective usage of NP based drug delivery in critical environment of CNS, it is quite likely that this approach can end up providing remarkable breakthroughs in early stage diagnosis and therapy of AD. Conclusion: In the current review, we have presented a comprehensive outlook on the current challenges in diagnosis and therapy of AD, with an emphasis on the effective options provided by biocompatible NPs as imaging contrast agents and drug carriers. © 2017 Bentham

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Alzheimer?s disease

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