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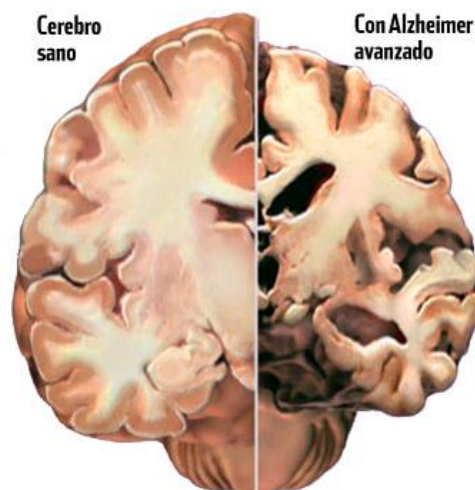
Lectura recomendada

(Lectura relacionada con la reciente Tertulia: ^{18}F
Radiofármacos Estilbeno derivados)

Amyloid- β imaging with PET in Alzheimer's disease: is it feasible with current radiotracers and technologies?

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Introduction

Although it afflicts an estimated 26.6 million people worldwide—a figure that is expected to quadruple by 2050—Alzheimer’s disease (AD) has yet to be fully understood etiologically, diagnostically, or therapeutically [1]. For decades, the most widely accepted definite diagnosis of AD has been the histological observation of senile plaques composed of amyloid- β ($A\beta$) and neurofibrillary tangles comprising tau [2–4]. Theories abound as to the mechanisms behind these deposits of $A\beta$ and tau, one of the most prominent of which is the “amyloid hypothesis.” This hypothesis proposes that the cleavage of amyloid precursor protein by β -secretase and γ -secretase causes $A\beta_{42}$ to accumulate as senile plaques, which results in synaptic and neuronal injury [5].

The credence afforded to the amyloid hypothesis has spurred the development of a number of tracers intended to reflect the burden of amyloid plaques in AD patients in vivo and non-invasively with positron emission tomography (PET). The earliest amyloid imaging agents, including [^{11}C] PiB and [^{18}F]FDDNP, were designed and tested in the early-to-mid part of the last decade, and have been limited to research studies. However, the advent of three new radiotracers, which are currently at various stages of FDA assessment and approval, has brought amyloid imaging to the doorstep of clinical use. Recent clinical studies on florbetapir (AV-45), florbetaben (BAY-94), and flutemetamol (GE-067) claim to have demonstrated an ability to discriminate between AD patients and healthy controls with high degrees of sensitivity and specificity [6–11]. However, the theoretical bases of and ubiquitous patterns in the reported data raise a host of lingering questions that should be addressed before these radiotracers are clinically approved.



Colabora con Farmacéuticos Mundi (**FarmaMundi**) (<http://www.farmaceuticosmundi.org/>)



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