

Pharma

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ملخصات

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Alzheimer's disease

Definition: neurodegenerative disease characteristic by:-

- 1- Progressive memory loss
- 2- Progressive Cognitive impairment
- 3- Behavioral abnormalities: depression, emotion liability, aggression, motor hyperactive

Type I (early onset)

- inherited (dominant)
- $< 1\%$
- < 40 y.o
- Rapidly progression
- Caused by mutation of one of:
 - A- amyloid Precursor Protein (APP) on chromosome 21
 - B- Presenilin 1 gene on chromosome 14
 - C- Presenilin 2 gene on chromosome 1

Type II (late onset)

- Sporadic
- $> 99\%$
- > 65 y.o
- Slowly Progression
- Causes: largely unknown
- Lipoprotein APO E ϵ ϵ allele: 40-60%
- Metabolic and environment factors
- Neurotransmitter dysregulation:-
~~Brain~~ ACh $\downarrow\downarrow$, glutamate $\uparrow\uparrow$
- Brain Vascular Pathology

Pathology :- Small size Brain by

Gross Picture :-

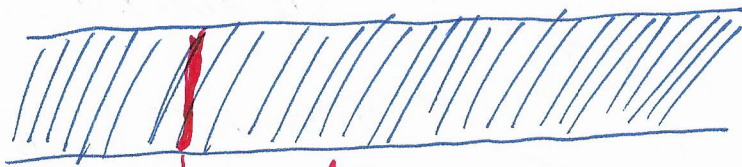
- Ventricles wider Than normal
- Hippocampus almost disappear

Microscopic :-

- Reduction number of neurons
- Plaques by β -amyloid Protein (يعزل الخلايا عن بعض)
- Tau protein intracellular Neurofibrillary Tangles

Bio chemical :- Ach $\downarrow$, Glutamate $\uparrow$ الجلاب هنا

Amyloid plaques :-



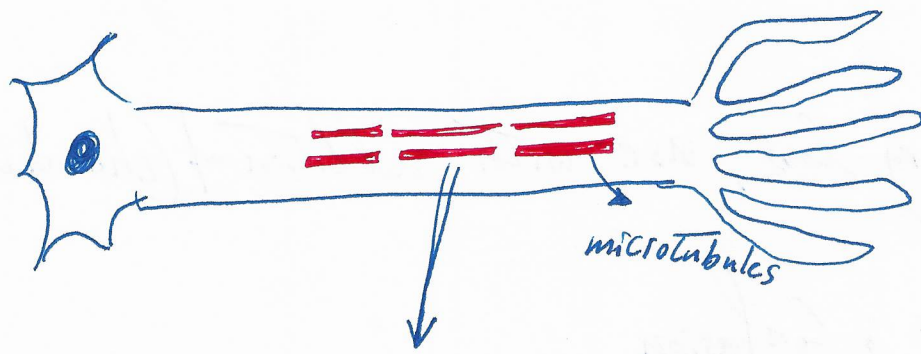
Neurone Cell membrane

→ rid of neurons by Presenilin 1,2 (chr 1,14)

عند المريض يبقى بمكانه (Beta amyloid)

أما الكدلة gene أو enzyme 1%

Neurofibrillary Tangles (NFTs) :-



microtubules → Tan Protein (مُتَبَيِّن بروتين microtubules)

* defect lead to intra cellular

Treatment :-

- 1- Cholinesterase inhibitors : Donepezil, Rivastigmin, galantamine
- 2- N-Methyl-D-aspartate (NMDA) Receptor of Glutamate antagonist : Memantine
- 3- Other : antidepressant, Vit E, estrogen, Ginkgo biloba

Cholinesterase inhibitor

- 1st line of treatment : selective for ChE in Brain
- 10% improve the memory

Adverse effect : ~~ChE~~ Peripheral → old age → Bradycardia, insomnia, nausea, vomiting....

NMDA antagonist

- 2nd line

- delay rate of memory loss, use with addition of (che. inhib.)

adverse effect :- **insomnia**, Confusion
old age ~~is~~

Other :-

anti-depressant :- **Escitalopram**

anti-Psychotic :- **Not recommended**, increase mortality and hemorragic strokes, also increase urine retention, headache

* Risperidone :- **الوحيد اذا لم ينجح**

Vit E
estrogen
Ginkgo biloba

} Without evidence