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POSTERS

HUMAN AMYLOID SEEDS AGGREGATE MORE EFFICIENT THAN SEEDS FROM OLD 3XTG-AD MICE

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Aims: Most age-associated neurodegenerative disorders involve the aggregation of specific proteins within the nervous system, as occurs in Alzheimer's disease (AD). Recent evidence indicates that Aβ can misfold and aggregate into seeds that structurally corrupt native proteins, mimicking a prion-like process of template protein corruption or seeding. In fact, studies in animal models show that the injection of brain homogenates from AD patients or from aged APP-transgenic mice containing Aβ aggregates, can induce some of the neuropathological hallmarks of AD. However, it is still unknown which Aβ-misfolded species are most efficient in triggering the aggregation process. Here, we seek to perform a comparative study to determine whether Aβ seeds from humans vs a familial AD line (the 3xTg-AD model) is more efficient to generate amyloid aggregates.
Methods: We employed histological and molecular approaches to determine amyloid level, species and aggregative capacity of brain homogenates from an AD patient (stage C for amyloid, from the Alzheimer's Disease Research Center at UCI) vs old-3xTg-AD mice (25-month-old). Such brain homogenates were injected into the hippocampus of 7-month-old 3xTg-AD mice and the mice were analyzed at 18 months of age.
Results: Our findings demonstrated that amyloid seeds from the human patient have more capacity to generate Aβ plaques vs seeds from aged 3xTg-AD mice.
Conclusions: These results suggest that seeds from human patients seem to be more amyloidogenic than from aged 3xTg-AD mice. Thus, more profound understanding these factors will provide key insight on how amyloid pathology progress in AD.