

The 6th Joint Conference Ramathibodi - Osaka University

~ Cutting Edge Innovation on COVID-19 and Beyond ~

29th - 30th November 2021

Abstract Sheet

Lecture Title	Primary Prevention of Dementia : 2021 Breakthrough in Dementia Arena, Ubon Home-made Vaccines for Dementia Prevention !!!
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Abstract [English]

Primary Prevention of Dementia : 2021 Breakthrough in Dementia Arena

Abstract...short story

Despite many large investigation research projects for dementia prevention being done during the last 3-4 decades, no definite answers for dementia prevention documented in medical literatures. So primary, de novo, prevention of dementia is a 2021 breakthrough in dementia arena. It is the outcome emerging on the top of Ubon Ratchathani dementia incidence and risk factors study. 519 new cases of dementia were found following analysis of 529,764 men and women aged 30 – 99 years and above in the Health Checks Ubon Ratchathani big data bank (HCUR Study) from 2006 – 2012. The incidence of dementia increases slowly at beginning and then rapidly in an exponential pattern to the peak at 84 years, then a terminal decline from 85–99 years. Age is the main and number one risk factor of dementia, inactive physical activity is the number two, and that diabetes mellitus the number three. Active physical activity of different degrees shows different running tracks on the Kaplan -Meier curves. And that a similar pattern of positive findings in the Hazard ratio analysis. Physical exercise could counter balance the negative effect of increasing age in the elderly in a dose response format. Once touching and passing the threshold level, no less than 2 days a week, the more you do the more you gain; 37 % dementia risk factor reduction at 3–5 days a week, 57 % at 6–7 days a week. Physical exercise could not stop the day by day up running age, but it could stabilize and counter balance the very active–progressive decline physiologic function of the brain. Why physical exercise could counter balance the negative impact of ageing brain. The answer is an effective draining and clearing of beta amyloid, the origin of amyloid plaque and amyloid cascade in Alzheimer disease out of the brain parenchyma through the glymphatic system. What is the glymphatic system ? The glymphatic system is a recently discovered macroscopic waste clearance system that utilizes a unique system of perivascular donut-shaped channels, formed by astroglial cells to promote efficient elimination of soluble protein and metabolites from the central nervous system. The regular lymphatic system like other organs in the body does not exist in the brain. With such a unique basic structure and function an effective draining and clearing beta amyloid and metabolic solutes certainly needs 2 mechanical forces, pulsation of the cerebral artery and the brain pulsation. A forceful and intense vasoconstriction and vasodilatation during physical exercise/activity is the first direct mechanism, sucking in and pushing out the beta amyloid through the glymphatic pathway of the brain. The second, indirect, mechanism is pulsation of the brain during body motion. The brain is extremely sensitive to movement of the body or part of the body. It is pulsating, bouncing up and down every single heartbeat, all the time, day and night, never stops; very much stronger and faster during physical exercises. So physical activity really creates an exotic random brain movements; equivalent to brain massage, an essential ingredient for neuronal plasticity and resilience. Being fixed by the brainstem and floated in the cerebrospinal fluid (CSF), the original 1,200 grams brain weight is reduced to 60 grams, this is the reason why it is so sensitive to body motion. Primary prevention of dementia, the sooner the better. Ideally before the onset of amyloid plaque and amyloid cascade formation, at the age where the dementia incidence not yet running up into the dementia super highway, the exponential curve ! Primary prevention of dementia, a job you can do it by yourself if you can walk, jog, dance, run, or take part in physical work no less than 3-5 days/week.

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With such a strongly positive effect of physical exercise in dementia prevention in mind, one can create and make different brand of vaccines, a homemade vaccine for dementia prevention...construction work, farming, folk dances, etc. Examples of homemade vaccine in Ubon NCD prevention project, a 4,000 subjects RCT : A cluster randomized controlled trial are presented.