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Euro Dementia 2018: The importance of platform in public-private partnerships and social care for Alzheimer's disease

Manabu Tamura, Sayaka Tomihara, Shinichiro Okazaki, Hiroki Yokote, Masahiro Uemura and Kazumi Nishikawa

Ministry of Economy, Trade and Industry, Japan

In patients with Alzheimer's disease (AD) who don't have surgical indications, anti-AD therapy is sometimes administered, while there are only four more or less effective drugs available. Of note, currently no medication exists, which might cure AD and everyone therapeutics may only slow the disease progression. Considering that, needless to say, the amount of AD patients will increase, gradually making it tougher for doctors to manage all cases of dementia, which can require modification of the healthcare system generally. It is particularly important in Japan, with a now rapidly aging society; the govt should clearly recognize possible increase within the incidence of dementia. Currently, there are a range of neuroimaging initiatives for AD worldwide (ADNI, CATI, etc.), and a number of other clinical trials are initiated (EPAD consortium, A4, GAP foundation, Memento, etc.). Japan thus needs international collaboration with medical practitioners and scientists from other countries. On the opposite hand, it's important to make AD platform in an exceedingly way of recent and innovative public-private partnership (PPP). This AD platform should aim at dementia research because the main target (e.g., risk reduction, prevention, early diagnosis, treatment, and life support), and also to ascertain common paradigm directed at development of the registry, investigated patients cohort, and bio-bank.

Collaboration of personal enterprises, academia and public entities (e.g., basic science in MEXT, clinical application in MLHW, integration of various fields in METI) may have a right away impact on the event of dementia research. Additionally, Japan may further accelerate AD studies at a brand new system for medical research and development (Japan Agency for Medical Research and Development–AMED), which has extended its activities and currently grips project and budget management (e.g., new orange plan in MLHW). There aren't any doubts that fair evaluation of clinical leads to AD considering COI (conflict of interests) should be done.

Additionally, it's important to form this information available to public in a straightforward to-understand and accurate manner. Practical analysis of social environmental factors resulting in AD, appropriate preventive measures, and treatment results are required within the future, since currently there's no therapeutic agent for AD with clearly confirmed clinical efficacy.

The prevalence of dementia worldwide is estimated to be over 45 million people and is predicted to triple by 2050 as a consequence of increased anticipation, establishing dementia together of the most important global public health challenges. Alzheimer's disease (AD) is that the commonest style of dementia and accounts for 60–80% of cases. AD may be a progressive neurodegenerative disease, irreversible and disabling, causing an outsized socioeconomic burden.

The criteria for AD diagnosis are revised extensively, and experts agree that the hallmark pathological criteria include increased levels of amyloid-beta (Aβ) peptide, which is deposited extracellularly in diffuse and neuritic plaques, and hyperphosphorylated tau (p-tau), a microtubule assembly protein that accumulates intracellularly as neurofibrillary tangles. Initial diagnostic efforts focused on patients at the dementia stage of the disease and, only recently, the importance of an extended pre-dementia stage, preceding the clinical onset of the disease symptoms, has been recognized. because the disease progresses, the subject's cognition changes from an initial phase where it's fully preserved to a finish characterized by dementia. The initial silent and asymptomatic stage, brought up as preclinical AD, is characterized by a sequence of pathophysiological hallmarks that start to seem about 20 years before the onset of symptoms.

Unfortunately, none of the drugs tested to this point in clinical trials so as to vary the course of the disease have shown effective leads to AD dementia. Therefore, many interventional studies are currently moving their focus to cognitively healthy individuals in danger of developing AD (before substantial irreversible neuronal network dysfunction and loss, related to overt clinical symptoms, have occurred) because the best strategy to scale back AD incidence and prevalence.

In this review, we'll summarize current strategies for AD prevention, from primary prevention strategies supported identifying risk factors and risk reduction, to secondary prevention supported early detection of the pathophysiological hallmarks and intervention at the preclinical stage. Furthermore, we are going to discuss variety of selected environmental risk factors for AD, and that we will describe currently ongoing interventional initiatives focused on primary prevention of AD, likewise as a number of the public–private partnerships (PPPs) for disease prevention that are putting in a framework to spot and choose individuals for clinical trials focused on preclinical stages.

Epidemiological evidence of AD risk factors is contributing and inspiring the event of primary prevention initiatives. Current trials and techniques are necessary steps whose results are helping to enhance future designs, bringing some post-hoc analysis on the potential benefits of risk factor reduction on disease incidence. Identifying individuals in danger of developing the disease can be the key to success of intervention studies.

Ongoing clinical trials in asymptomatic participants with either a positive amyloid biomarker or at increased genetic risk of AD will help ascertain whether secondary prevention initiatives are valid strategies and whether clinical trials of 3–5 years are sufficient for delaying cognitive decline, and consequently the onset of Alzheimer's dementia.

The implementation of effective prevention strategies isn't free from challenges since they require the identification, characterization and participation of asymptomatic individuals, developing new primary endpoints, implementing the employment of AD biomarkers in cognitively healthy people, disclosing these results and performing long trials, whose optimal length is yet to be determined. The incorporation of biomarkers to spot individuals in danger of developing AD dementia could be a key step for the identification of ideal candidates to participate in trials and secondary prevention initiatives.

Clinical trials focused on the preclinical stage of AD might help to maximise the chance of obtaining a clinical signal similarly as

developing sensitive methods for detecting early decline through new trial designs.

Foot Note: This work is partly presented at Event on 11th International Conference on Alzheimers Disease & Dementia May 24-25, 2018 at Vienna, Austria