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研究課題名(和文) Dementia prevention within the ageing Japanese society

研究課題名(英文) Dementia prevention within the ageing Japanese society

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研究成果の概要(和文)：本研究の目的は、認知症のリスク因子を探索することである。実行可能性を考慮し、この研究では、多価不飽和脂肪酸(PUFA)および魚の摂取を主なリスク因子として焦点をあてた。PUFAは、n-3系PUFA(エイコサペンタエン酸、ドコサヘキサエン酸、ドコサペンタエン酸、アルファリノレン酸)と、n-6系PUFAとした。PUFAおよび魚の摂取量と認知症のリスクとの関連について、多変量Cox比例ハザードモデルで分析しハザード比(HR)と95%信頼区間を求めた。なお、本検討について、論文を現在専門誌に投稿し、査読を受けている段階であるため、本報告書では具体的な結果を公表しない予定である。

研究成果の学術的意義や社会的意義

Prioritizing dementia research, diagnosis and control is a public health priority. We expect that using reliable data from a large-scale Japanese cohort will contribute to Japan's dementia-related goals established by the Ministry of Health Labor and the WHO's global dementia goals.

研究成果の概要(英文)：The underlying purpose of the study remained to explore risk factors of dementia with a slight shift in the focus due to feasibility. The main risk factors analysed in the study were polyunsaturated fatty acids (PUFA) and fish intake and risk of disabling dementia. Total n-3 and n-6 PUFA and as well as n-3 PUFA eicosapentaenoic acid (EPA), docosahexaenoic acid (DHA), docosapentaenoic acid (DPA) and alpha-linolenic acid (ALA) and the risk of disabling dementia were analysed in multivariable Cox proportional hazard models to obtain hazard ratios (HR) and 95% confidence intervals (CI). The manuscript is currently being submitted to a journal for peer review and concrete results of the study will therefore not be released in this report.

研究分野：Public Health

キーワード：Dementia Ageing Epidemiology Nutrition

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1. 研究開始当初の背景

(1) Dementia is defined as a syndrome, often chronic or progressive, characterized by deterioration in cognitive function which particularly affects memory and thinking and the ability to complete daily activities. Globally, approximately 50 million people are living with dementia, this number is set to triple by 2050, making it a major public health concern. The majority of people live in Asia, 22.9 Million in 2015. Japan's life expectancy is longest in the world and Japan's dementia prevalence was estimated to be between 2.9% and 15.75% and increasing. However the rates of death from dementia are higher in Scandinavia and English-speaking North America. Other countries may learn from Japan's experience.

(2) Various risk factors for dementia have been identified including age, physical inactivity, obesity, unhealthy diets, tobacco, alcohol, low educational attainment, social isolation/depression and cognitive, hearing loss, high blood pressure, diabetes. Associations between dietary factors, occupation, sleep and stress are less clear. Addressing these modifiable risk factors, dementia may be partially prevented, onset delayed or severity of progression reduced with adequate timely population-wide diagnosis.

(3) Dementia poses a huge burden on individuals and society. Estimated costs to society were US\$1.3 trillion in 2019, by 2030 the costs are likely to surpass US\$ 2 trillion. The World Health Organization launched "The Action Plan on the Public Health Response to Dementia 2017-2025" with the overall goal of improving the lives of people living with dementia, their caretakers and families while simultaneously reducing the impact of dementia on individuals, their communities and countries. The plan calls for national dementia policy development, risk reduction and increase in global research output on dementia.

(4) Dementia is also a priority for the Japanese government, particularly for the Ministry of Health, Labour and Welfare. The "New Orange Plan" is a comprehensive strategic approach to address dementia. Within this framework we are seeking to contribute to a more rapid population level screening process. Currently in-hospital diagnosis takes approximately one hour, making it cumbersome and time consuming for individuals to initiate getting screened.

(5) We are investigating risk factors of disabling dementia in the Japan Public Health Center (JPHC) prospective Study. The funding for the disabling dementia case data creation was provided by a Kiban B grant (16H05246). The prevalence of dementia is high. Among approximately 50,000 cohort study participants, nearly 7,000 cases were diagnosed with grade IIa or higher between 2006 and 2016. Grade IIa refers to individuals with dementia-related symptoms, behavioral disturbance and/or difficulty communicating limiting daily living outside the home, but who were capable of daily living under someone's attention.

2. 研究の目的

(1) The Japanese population is aging and the prevalence of dementia is high and increasing. We used data from a large Japanese prospective cohort study. We analytically explored risk factors of dementia among Japanese elderly with the goal of prioritizing dementia research, diagnosis and control as a public health

priority. We expect that using reliable data from a large-scale Japanese cohort will contribute to Japan's dementia-related goals established by the Ministry of Health Labor and the WHO's global dementia goals.

3. 研究の方法

(1) Preparation phase: The initial stage consisted of preparing a literature review

(2) Obtaining and analyzing data:

-Study design: Prospective cohort. This study included participants in areas of the JPHC Study with available insurance care records.

-Study area: Five public health center areas within Japan: Yokote, Saku, Kasama Chikusei, Konan, Uruma

-Population: Japanese men and women (~50,000) who were aged 40-69 at the time of the Japan Public Health Center prospective Study baseline 1990-1993.

-Exposures: We will analyze risk factors related to dementia: polyunsaturated fatty acids and fish

-Outcome: Dementia cases were identified by "kaigo" insurance care records. The primary outcome of our study will be all subjects with dementia Grade IIa+ and higher. Secondary outcomes included sensitivity analyses by excluding participants with a past history of diabetes, hypertension, and stroke.

(3) Dissemination phase:

In the last and current phase we are disseminating our findings by preparing a study report and publication of our findings in a peer-reviewed journal as well as presentations at domestic and international conferences. This Japanese dementia research will help inform domestic and global policy and guideline development.

4. 研究成果

(1) The underlying purpose of the study remained to explore risk factors of dementia with a slight shift in the focus due to feasibility. The main risk factors analysed in the study were polyunsaturated fatty acids (PUFA) and fish intake and risk of disabling dementia. Total n-3 and n-6 PUFA and as well as n-3 PUFA eicosapentaenoic acid (EPA), docosahexaenoic acid (DHA), docosapentaenoic acid (DPA) and alpha-linolenic acid (ALA) and the risk of disabling dementia were analysed in multivariable Cox proportional hazard models to obtain hazard ratios (HR) and 95% confidence intervals (CI). The manuscript is currently being submitted to a journal for peer review and concrete results of the study will therefore not be released in this report.

引用文献

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Asada 2012 [Prevalence of dementia in Japan: past, present and future]. *Rinsho Shinkeigaku*;52(11):962-4.

Okamura 2013. Prevalence of dementia in Japan: a systematic review. *Dement Geriatr Cogn Disord*; 36

Alz (Alzheimer's Disease International) <https://www.alz.co.uk/research/statistics> (accessed Sept 28, 2018)

World atlas <https://www.worldatlas.com/articles/countries-with-the-highest-rates-of-deaths-from-dementia.html> (accessed Sept 28, 2018)

5. 主な発表論文等

〔雑誌論文〕 計0件

〔学会発表〕 計0件

〔図書〕 計0件

〔産業財産権〕

〔その他〕

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6. 研究組織

	氏名 (ローマ字氏名) (研究者番号)	所属研究機関・部局・職 (機関番号)	備考
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7. 科研費を使用して開催した国際研究集会

〔国際研究集会〕 計0件

8. 本研究に関連して実施した国際共同研究の実施状況

共同研究相手国	相手方研究機関
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