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Early-Onset Dementia: Causes Compared to Late-Onset Dementia

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Abstract

Objectives: To compare characteristics and causes of early-onset dementia (EOD) and late-onset dementia (LOD) and to explore predictors of EOD and LOD.

Materials and Methods: A retrospective case-control study included dementia patients with MOCA score ≤ 25 or MMSE score ≤ 22 . Baseline characteristics and causes of dementia were collected. Student t-test or Mann-Whitney, and Chi-square or Fisher's exact tests were used to compare the data. Uni- and multivariate logistic regression were used to explore the predictive factors.

Results: Twenty-hundred twenty-six patients were included (148 in each group). The percentage of treatable causes in EOD was significantly higher than LOD (14.86% & 6.8%, respectively). Regarding non-treatable causes, mixed dementia was significantly lower in EOD (9.46%) than LOD (26.35%). There was a significant difference in presenting symptoms between EOD and LOD. Most of the LOD patients presented with memory problem (96%) while 18% of EOD patients presented with non-memory domain. Baseline characteristics showed that male gender, smoking, alcohol drinking, bachelor's degree or higher, family history of dementia was significantly higher in EOD compared with LOD. On the other hand, EOD group had significantly lower rate of hypertension (HT), dyslipidemia, diabetes and chronic kidney disease (CKD) than LOD group. However, in multivariate analysis, only smoking, family history, HT and CKD remained significantly different between the two groups.

Conclusions: Treatable causes of dementia was not uncommon and should be considered especially in EOD. Controlling risk factors (smoking, HT and CKD) may delay the development of both EOD and LOD.

Keywords: Dementia, Early onset, Late onset, Cause, Neurogenerative

Vascular Risk Factors for Vascular Dementia Compared with Alzheimer's Disease

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Abstract

Background and Objective: Evidence of an association between vascular risk factors and vascular dementia (VaD) and those of Alzheimer's disease (AD) are still inconsistent. Dyslipidemia was not previously included as a risk factor for any dementia in the Lancet model. This study aims to assess the vascular risk factors include hypertension, dyslipidemia, diabetes, and smoking in patients with VaD compared to AD.

Materials and Methods: The design was a retrospective cross-sectional analysis on patients who were diagnosed with AD and VaD conducted at Ramathibodi Hospital from January 2011 to December 2021. Multivariate analysis with multi-level mixed-effects logistic regression was used to determine independent vascular risk factors associated with the type of dementia.

Results: A total of 220 patients consisting of 110 patients with AD and 110 patients with VaD met the inclusion criteria. Hypertension and dyslipidemia were significantly higher in VaD compared to AD (OR = 3.2 [1.5-6.9]; P value=0.002, and OR 2.4 [1.2-4.8]; P value=0.012, respectively). However, smoking and diabetes tended to have more association with VaD than AD but no statistical significant.

Conclusion: Hypertension and dyslipidemia were significant risk factors associated with VaD compared with AD. In the present that has no curative treatment available for patients with dementia. This study found the importance of dyslipidemia that should not be overlooked. Controlling lipid level and hypertension may lower the risk of dementia especially VaD.

Cognitive Performance Improvement after CPAP Treatment in Obstructive Sleep Apnea Patients

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Abstract

Objectives: We aimed to study any subjective and objective cognitive improvement after continuous positive airway pressure (CPAP) treatment in patients with obstructive sleep apnea (OSA).

Material and Methods: A pilot, prospective cohort of OSA patients, was conducted. Baseline demographic data and cognitive scores at baseline and follow-up after CPAP treatment were collected. Cognition was assessed by the Montreal Cognitive Assessment (MoCA) and the Color Trails Test (CTT). The Memory index score (MIS) was also calculated from the MoCA. All patients had to have cognitive impairment at baseline, which was defined by MoCA <25, or CTT-time part 1 (CTT1) or 2 (CTT2) score below 16th percentile. Patients with severe dementia were excluded. The subjective cognitive complaint was assessed using the Cognitive Change Index (CCI).

Results: Among 30 patients with an age of 62.5 years (IQR 55-68), 53.3% are female. All patients underwent polysomnography and were classified as having severe OSA. The median follow-up duration after CPAP treatment was 12 months (IQR 11-14). The baseline median score of MoCA was 23 (IQR 20.5-24). After CPAP treatment, there was a significant improvement in MoCA score to a median score of 24 (IQR 21-26) ($p=0.048$). The median of MIS before and after CPAP treatment was improved significantly ($p=0.002$) from 8.5 (IQR 6-10) to 12 (IQR 9-13). However, the CTT1, CTT2, CCI, and Thai-Geriatric Depression Scale did not differ significantly in comparison to the baseline.

Conclusion: Thai patients with severe OSA who had concomitant cognitive difficulties could have a cognitive benefit after CPAP treatment. A larger investigation is required to illustrate the magnitude and prognosis of CPAP treatment related to cognition in OSA patients.

Factors Associated with Caregivers' Distress of Patients with Dementia Receiving Activity-based Services at Dementia Day Center

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Abstract

Objective: To study the factors associated with caregivers' distress among service users of Dementia Day Center at King Chulalongkorn Memorial Hospital (DDC).

Method: Clinical information from patients with dementia and their caregivers was collected during initiation and using the clinical service of DDC. Only patients who utilized the service for at least three months were included. On the patient's features, cognition was measured by the TMSE; BPSD was examined by the NPI-Q; gait and balance were assessed by Berg Balance Scale; and activity of daily living was evaluated by ADFACS. On caregivers' distress, stress and burden were assessed by SPST-20 and ZBI, respectively. Data were modelled with PLS-SEM, using patient's profile and clinical features, caregiver distress, and duration of intervention as investigating latent variables.

Results: During the past 3 years of operation, 31 patients with dementia met the criteria for analysis. The average age was 79.7±9.02 years and 26 (83.9%) subjects were female. Treatment duration was varied between 3 to 44 months (median 15 months, IQR 6 and 29 months). PLS-SEM shows that caregivers' distress was largely explained by patients' features (p-value <0.001) than the duration of receiving services at DDC (p-value 0.100). Cognition, BPSD, balance and gait problems, basic and instrumental ADL, and being male were associated with increased caregiver distress (p-value <0.01). Treatment duration at DDC was associated with decreasing caregiver distress, but not statistically significant.

Conclusion: The patient's clinical characteristics and male gender were significantly related to the caregiver's distress. Treatment duration in DDC was negatively, but not statistically related to caregivers' distress. However, a small sample size and variation in treatment duration might limit the statistical power of the current observational study.

Abbreviations: TMSE – the Thai Mental State Examination; NPI-Q – Neuropsychiatric Inventory Questionnaire; ADFACS – Alzheimer's Disease Functional Assessment and Change Scale, SPST-20 – Suanprung Stress Test-20, ZBI- Zarit Burden Interview, PLS-SEM -- Partial Least Squares Structural Equation Modelling

The Effect of COVID-19 Pandemic on Self-Perceived Change of Caregiver's Burden in Providing Care for People with Dementia

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Abstract

Objectives: To evaluate caregiver burden and perceived change among caregivers (CG) of people with dementia (PwD) during the COVID-19 pandemic and its related factors.

Methods: This study was a cross-sectional, electronic questionnaire-based survey among the primary CG of PwD. Demographic data of CG and PwD, caregiver burden (Zarit Burden Interview; ZBI-12), depression (Patient Health Questionnaire; PHQ-9), functional independence (Barthel's index), and neuropsychiatric features (NPI-Q) were interviewed. In addition, the perceived change of PwD's function and NPI-Q between the period before the COVID-19 and during the COVID-19 pandemic were interviewed. Daily life, impact on medical service, COVID vaccination, and worry about the COVID situation were also interviewed.

Results: 135 primary CGs were enrolled at the Geriatric clinic, Siriraj Hospital, and online media. Most CGs reported increasing in a perceived change of CG burden and depression. The younger age, women, higher educational level of CGs, a conflict between PwD and CG, and functional deterioration of PwD were associated with CG burden ($p < 0.05$). Comparing between the period before and during the COVID-19 pandemic, there was a worsening of NPI-Q score ($p < 0.001$) and level of dependence of the PwD ($p < 0.001$). The multivariate analyses indicated the ZBI-12 scores were significantly associated with depression ($p < 0.001$) and the neuropsychiatric symptoms (NPI-Q) during the COVID-19 pandemic ($p = 0.022$). There was no significant association between CG burden and the worry of COVID-19 issues.

Conclusions: This study demonstrates the worsening mental health in CG and functional deterioration in PwD during the COVID-19 pandemic. Lack of emotional support, coping skills, and family relationships may contribute to the CG burden.

Keywords: Coronavirus disease 2019 (COVID-19), Caregiver burden, Caregiver distress, Depression, dementia

Correlation of Activity Tracking Data and Wandering Symptom of Patients with Dementia at King Chulalongkorn Memorial Hospital

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Abstract

Objectives: To examine the correlation of information from an activity tracking device and questionnaire on wandering behavior of patients with dementia at home.

Methods: Concurrent data collection on the activity tracking device and wandering questionnaire (the Revised Algate Wandering Scale; RAWS) were obtained from ten dyads of patients with dementia and their caregivers. The eligible outpatient with clinically diagnosed dementia must be able to stand up from a sitting position, sit down on a chair as well as walk daily. The RAWS is a caregiver-rating questionnaire recording five wandering behavior aspects: persistent walking, spatial disorientation, eloping behavior, routinized walking, and mealtime Impusivity. The study was conducted in patients' residence for four consecutive weeks. Weekly data from the activity tracking device were processed and correlated with the information from the RAWS.

Results: Between August 2021 and January 2022, the researchers had recruited ten dyads. A significant correlation was identified between the daytime walking proportion and movement score obtained from the activity monitoring device and the RAWS score. The walking proportion was associated with overall RAWS score ($r=0.591$), repetitive walking ($r=0.615$), eloping behavior ($r=0.582$), and persistent walking ($r=0.500$). In addition, the average weekly daytime movement was related to eloping behavior ($r=0.423$).

Conclusions: The current study shows the significant correlation of information from an activity tracking device and questionnaire on wandering behavior of patients with dementia. Although, a small sample size was a major limitation. The activity monitoring device could add objective information to clinical assessment, especially in wandering evaluation.