Session 4035 (Symposium)

CHRONOBIOLOGICAL FACTORS RELATED TO SLEEP AND NEUROPSYCHIATRIC SYMPTOMS IN PERSONS LIVING WITH DEMENTIA

Chair: Nancy Hodgson
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Circadian rhythm disturbances (CRD) are commonly seen in people living with dementia. A clear understanding of the role of CRD in dementia etiology will be beneficial by exploring the exogenous factors (externally influence the duration of sleep hours, such as light/dark cycles) and endogenous factors (internal biological rhythm, such as diurnal cortisol pattern). This symposium will apply a chronobiological approach to study exogenous and endogenous factors that influence circadian rhythm and their effects on sleep and neuropsychiatric symptoms in persons living with dementia (PLWD). Four paper presentations will use secondary data analysis of data from the Healthy Patterns Clinical Trial (NCT03682185), a randomized controlled trial of a home-based activity intervention designed to improve circadian rhythm disorders in PLWD. We will first describe the circadian rhythm pattern reflected by endogenous factors (salivary cortisol), then examine salivary cortisol (endogenous) and white light intensity (exogenous) and on subjective sleep and neuropsychiatric symptoms (including depression) in PLWD, respectively. In session 1, we will present cortisol diurnal rhythm pattern in PLWD using a cross-sectional design. In session 2, we will discuss the relationship between salivary cortisol indicators and depressive symptoms. In session 3, we focus on the association between diurnal cortisol slope and neuropsychiatric symptoms using the baseline data. In session 4, we describe the association between evening white light exposure and subjective sleep. The discussant will describe how these findings build on our understanding the nature of circadian rhythm disturbance in dementia and inform future research and treatment approaches.

BEDTIME SALIVARY CORTISOL AND DEPRESSIVE SYMPTOMS IN OLDER ADULTS LIVING WITH DEMENTIA

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The dysregulation of cortisol has been associated with depressive symptoms in older adults. To date, no prospective longitudinal studies have examined whether salivary cortisol is a risk factor for depressive symptoms in persons living with dementia (PLWD). With a sample of 123 PLWD, baseline salivary cortisol was collected at awaking, 30 minutes after awaking, and bedtime. Depressive symptoms were assessed at baseline and the four-week follow-up. Cortisol indicator were centered. Baseline bedtime cortisol level was significantly associated with depressive symptoms in a curvature style while controlling age, gender, and baseline depressive symptoms (β=3.76 for linear term and β=-1.57 for quadratic term, both ps<0.04). No other baseline cortisol measures were significant prospective predictors. Our results suggest the bedtime cortisol was a significant risk factor for depressive symptoms in PLWD. These findings suggest that bedtime cortisol may play a role in the etiology of depressive symptoms in PLWD.

SALIVARY CORTISOL PATTERNS IN PEOPLE LIVING WITH DEMENTIA

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Salivary cortisol has a well-documented circadian pattern in older adults. Yet, the pattern of salivary cortisol in persons living with dementia (PLWD) due to circadian rhythm disturbances is unknown. This study examined diurnal salivary cortisol patterns in 176 PLWD (mean age 73.6±8.8, 33.3% male, clinical dementia rating >=0.5) by collecting saliva at waking (AM1), 30 minutes after waking (AM2) and bedtime (PM) over two consecutive days. Cortisol awakening response (CAR) was calculated as the change between AM2 and AM1 cortisol levels. The mean baseline salivary cortisol levels (ug/dl) were 0.35 (SD:0.3) at AM1, 0.40 (SD:0.39) at AM2, and 0.19 (SD:0.4) at PM. On average, cortisol levels decreased from morning to evening, with 58% exhibiting a positive CAR (mean 0.05; SD:0.34). There were no significant associations between cortisol levels with age, sex, obesity, and comorbidities. The findings demonstrated that diurnal cortisol rhythms are maintained in PLWD with a flattened CAR.

RELATIONSHIPS BETWEEN SALIVARY CORTISOL SLOPE AND NEUROPSYCHIATRIC SYMPTOMS IN PERSONS LIVING WITH DEMENTIA

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While a flatter diurnal cortisol slope has been related to poor health outcomes in healthy populations, little is known about this relationship in persons living with dementia (PLWD). The purpose of this study was to examine the association between diurnalcortisol slope and neuropsychiatric symptoms in PLWD. Secondary data analysis was conducted using baseline data from the Healthy Patterns Study (N=168). Diurnal cortisol slope was calculated using the difference between changes in salivary cortisol from 30 minutes after awakening to bedtime. Spearman rho coefficients were used. Flatter cortisol slope was associated with the presence of symptoms of agitation (r=-0.191, p=0.013) and disinhibition