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Impact of Anxiety and Nervousness on Neurocognitive and Cardiovascular Health of Older People: A Systematic Study of Anxiety Testing with Venlafaxine Can Be Useful in Identifying Neuropsychiatric Changes Might be Associated with Beta-Amyloid

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ABSTRACT

Anxiety and nervousness mainly lead to depression and it is also effect on neurocognitive and cardiovascular condition it may be linked to expansion in beta-amyloid proteins, a peculiarity marker of Alzheimer's disease. This study suggests that among older persons with a positive amyloid and those with exalted anxiety and nervousness symptoms show a more prompt decline in global cognition, lexical memory, language and main function over a 12 months' time period. Persons who have mild cognitive impairment and elevated levels of anxiety are 125% more likely to improve Alzheimer's disease [1]. In this study reveals that anxiety and nervousness can cause inflammation in the brain and high risks of health issues like dementia and known risk factor for Alzheimer's. Mainly the invariable modifications Alzheimer's disease is a diminution of the agitation of choline acetyltransferase in the cerebral cortex and hippocampus. Extreme provocation of glutamate receptors.

INTRODUCTION:

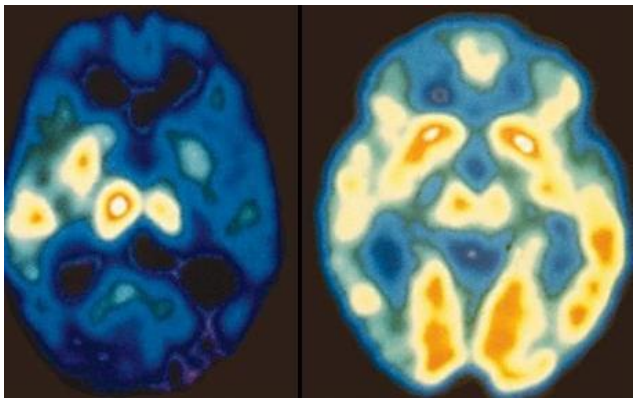
Anxiety and nervousness and these are things lead to major depression. These neuropsychiatric symptoms are main signs of Alzheimer's and people with dementia and their caregivers. Neurocognitive disorders having cognitive decline and under recognized challenging to treat the Alzheimer's and their addressed these challenges in 2020[14].

Anxiety and nervousness are common disorders in older people and are commonly managed by general practitioners. Comorbidity compounds the impact on patients, careers and health services.1-3 Yet, the relationship between the two is complex features overlap and each seems to be a possible risk factor, consequence of the other. Thus, identification and effective management of anxiety in people with dementia remains a challenging task in clinical practice. This article provides a clinically oriented selective review of current knowledge about anxiety and nervousness. Although the literature overwhelmingly focuses on Alzheimer disease [17], here we also discuss mild cognitive impairment and other types of dementia. Mild cognitive impairment refers to a clinical status where a patient performs below norms on cognitive tests but does not have dementia. Either the patient or someone who knows him or her well should have noticed a change from premorbid cognitive function. Statistically, people with mild cognitive impairment are at increased risk of developing dementia over time, although the individual risk can vary significantly. Both anxiety and nervousness are reported in Alzheimer's disease. In a study of 25anxiety patients, 67% had psychotic symptoms. They occurred two to six times per week, persisted for 12 weeks among 32% and recurred in 50% within 12 months[18]. They were associated with accelerated cognitive and functional decline and increased mortality. These frequencies were higher still among patients with anxiety with Lewy bodies.

***Epidemiology*:**

Reported rates of depression in dementia vary substantially, depending on the population sampled, means of assessment and definition of casernes. Overall, most well conducted population-based studies report prevalence's between 8% and 30%[12]. In hospitalized patients and nursing home residents, the prevalence may be over 40%. Variance in prevalence estimates is greater in studies of mild cognitive impairment. A recent review of anxiety in mild cognitive impairment found median proportions of 44% in samples of hospital-based patients and 16% in community-based samples. The limited studies

investigating depression in people with vascular dementia, Lewy body dementia or dementia associated with nerve diseases suggest that anxiety may be more common in these syndromes than in Alzheimer disease [11].



Without anxiety brain **With anxiety brain**

Fig. 1. Difference between with anxiety and without anxiety brain.

Common mental health problems such as depression and anxiety are distributed according to a gradient of economic disadvantage across society with the poorer and more disadvantaged disproportionately affected from common mental health problems and their adverse consequences[21]. Mental health problems constitute the largest single source of world economic burden, with an estimated global cost of £1.6 trillion – greater than cardiovascular disease, chronic respiratory disease, cancer, and diabetes on their own. In India, the estimated costs of mental health problems are between £70-£100 billion each year and account for 4.5% of GDP. In the US, 70 million days are lost from work each year due to mental ill health (i.e. anxiety, depression and stress related conditions), making it the leading cause of sickness absence. There are strong links between physical and mental health problems.2012 report by that 30% of people with a long-term physical health problem also had a mental health problem and 46% of people with a mental health problem also had a long-term physical health problem[29].

Computerized cognitive-behavioral therapy (CCBT) :

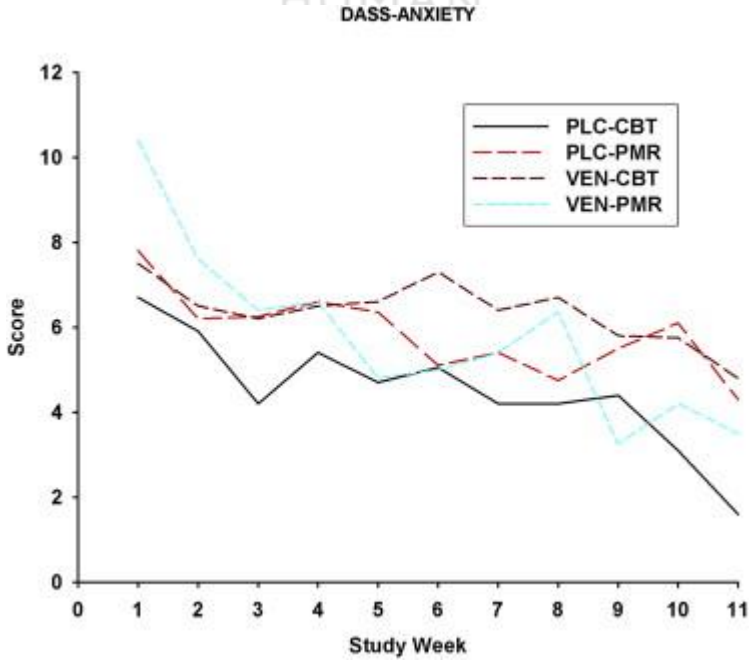
Computerized CBT is a form of self-help treatment that appears to be accessible and cost-effective, and suitable for people who prefer to avoid disclosure of sensitive information to a therapist. It is believed to be most effective with mild to moderate depression.[25]

A 2017 systematic review of the evidence from around the globe suggests that CCBT is effective at a comparable level to clinic-delivered CBT in reducing anxiety in older people. This finding was reported to be sustained over time. In 2015, a study in India with 23 adolescents revealed that CCBT led to improvements in depression and anxiety. This improvement was sustained at the 12 month follow-up.[28]

The next stage in CBT is usually one or more variations of therapeutic *exposure* during which the person practices facing his or her fears. Therapeutic exposure (as opposed to everyday exposure that some people have) is carried out carefully and under the guidance of a therapist. It is usually gradual, meaning that exposure begins with facing easier situations, working up to more challenging ones. The person also practices self-supervised exposure tasks between treatment sessions.[16]

The effects of the antidepressant venlafaxine (VEN-225 mg daily) and transdiagnostic cognitive behavioral treatment (CBT) alone and in combination on alcohol intake in subjects with co-morbid alcohol use disorders (AUDs) and anxiety disorders were compared. Drinking outcomes and anxiety were assessed for 81 subjects treated for 11 weeks with one of 4 conditions:[15]

Fig 2:



For the HAM-A scale, the Time effects, but not the Group or the Time × Group effects, were found to be significant [$F(2, 90) = 16.4$; $p < 0.0001$]. The least squares mean for the HAM-A

scale declined significantly from Session 1 to Session 8 for the PLC-CBT [from 14.2 (7.3) to 9.1 (5.5)] and VEN-PMR [from 16.5 (6.8) to 7.9 (5.5)] treatment groups, but not for the VEN-CBT [from 13.5 (5.9) to 9.8 (6.9)] or the PLC-PMR [from 12.9 (4.1) to 9.1 (4.2)] groups. The Time effect was also significant for the HAM-D [$F(2, 80.4) = 8.8$; $p = 0.0003$]. Session 1 to Session 8 comparisons for HAM-D least squares means were significant for the VEN-PMR group [from 13.0 (7.2) to 5.9 (5.60)], but not the VEN-CBT [from 12.0 (5.7) to 8.8 (6.6)], PLC-CBT [from 11.7 (6.0) to 8.5 (4.6)], or PLC-PMR [from 13.6 (5.0) to 10.0 (6.2)] groups. Group effects and Time × Group interactions were not significant for the CDS measure of craving obtained during the treatment period. The Time effect was significant for this analysis [$F(10, 271) = 3.9$; $p < 0.0001$][18]. The decrease in CDS least squares mean values from Session 1 to Session 11 was significant only for the VEN-CBT group [$p = 0.011$; from 8.6 (6.0) to 4.2 (1.9)] and for the PLC-PMR group ($p = 0.004$), with scores declining from 7.5 (5.1) to 4.3 (2.7).[19]

Beta-amyloid (Aβ) is present in the brain's interstitial fluid (ISF) and is considered a metabolic "waste product". Mechanisms by which Aβ is cleared from the brain are not completely understood, although there is evidence that sleep plays an important role in Aβ clearance. In rodents, chronic sleep restriction led to increases in ISF Aβ levels and in a *Drosophila* model of Alzheimer's disease (AD), chronic sleep deprivation (SD) resulted in higher Aβ accumulation. In healthy humans, imaging studies have revealed associations between self-reports of less sleep duration or poor sleep quality and higher Aβ burden (ABB) in the brain, which is a risk factor for AD. This association has been considered bidirectional because increased ABB could also lead to impairments in sleep. Notably, increased ABB in the brain has been associated with impairment of brain function. Thus, strategies that prevent Aβ accumulation in the brain could promote healthy brain aging and be useful in preventing AD. In this respect, there is increasing evidence that sleep disturbances might contribute to AD, in part by facilitating accumulation of Aβ in the brain.

Alzheimer's disease: Efficacy and Safety of Sertraline Therapy

Table 1 Comparison of Outcomes in the Sertraline- and Placebo-Treated Groups at Weeks 3, 6, 9, and 12*

Variable	Placebo-Treated Group (n = 20)	Sertraline Hydrochloride–Treated Group (n = 24)	Effect Size†	Comparison $F_{(1,41)}$	Comparison *P* Value
Depression on CSDD					
Baseline	18.1 (4.0)	20.2 (5.4)			
Week 3	16.0 (4.3)	14.1 (8.4)			
Week 6	16.5 (6.2)	11.3 (7.8)		10.9	.002‡
Week 9	15.8 (5.2)	10.3 (7.8)			
Week 12	14.9 (5.5)	10.3 (7.7)	0.68		
Depression on HDRS					
Baseline	21.8 (5.4)	23.7 (6.4)			
Week 3	20.9 (4.8)	17.8 (9.5)			
Week 6	19.3 (7.1)	12.9 (9.4)		7.0	.01§
Week 9	19.8 (6.2)	14.4 (9.3)			
Week 12	17.3 (6.8)	13.2 (9.0)	0.51		
ADL impairment on PGDRS-ADL					
Baseline	7.2 (8.5)	6.8 (6.4)			
Week 3	7.1 (7.9)	6.7 (7.0)			
Week 6	8.2 (8.9)	6.4 (6.8)		3.5	.07‖
Week 9	10.0 (8.8)	6.2 (7.2)			
Week 12	9.9 (9.4)	6.5 (7.9)	0.39		
Behavior disturbance on NPI					
Baseline	21.8 (13.0)	22.9 (20.1)			
Week 3	15.8 (8.6)	17.6 (18.8)			
Week 6	18.1 (11.5)	15.8 (18.0)			.32¶
Week 9	20.1 (13.2)	15.3 (17.6)		1.0	
Week 12	18.1 (14.9)	14.0 (17.0)	0.25		
Cognition on MMSE					
Baseline	16.3 (6.7)	17.5 (6.4)			
Week 3	17.6 (6.2)	17.3 (6.4)			
Week 6	16.7 (6.4)	17.3 (6.3)			.22#
Week 9	17.1 (6.7)	16.3 (7.7)		1.5	
Week 12	16.8 (7.1)	16.1 (8.5)	0.09		

Paternal mental health is also of crucial importance. Postnatal depression in fathers has been associated with emotional and behavioral problems in their child. [4]According to a 2017 report from Alzheimer's disease International, dementia affects mainly older people, but around 2-10% of all cases of dementia are estimated to start before the age of 65 years. After 65 years of age, the prevalence doubles every five years. In 2017, a report from Alzheimer's disease International estimated that the number of people living with dementia worldwide was 44 million, and this was predicted to double by 2030. This means that 1 in every 79 people of the total India population, and 1 in 14 people aged 65 years and over, had dementia.[14]All subjects and caregivers grasped illness education emotional and encouragement and their support. For all study visit their criteria met inclusion and exclusion variance were calculated on Hamilton Depression rating scale (HDRS) to conclude a baseline

and then approaches a single placebo during a 2-week, with a single blind phase. This was mainly eliminating transient who have depression symptoms and their meeting criteria more than 40% reduction in HDRS scores. In this analysis participants were excluded they no longer met inclusion criteria and that was because of decrease level in HDRS score[30]

Table 2 Adverse Events, by Study Visit and Treatment Group*

	Up to Week 3		Up to Week 6		Up to Week 9		Up to Week 12	
Variable	Placebo-Treated Group (n = 20)	Sertraline Hydrochloride–Treated Group (n = 24)	Placebo-Treated Group (n = 18)	Sertraline-Treated Group (n = 24)	Placebo-Treated Group (n = 18)	Sertraline-Treated Group (n = 21)	Placebo-Treated Group (n = 17)	Sertraline-Treated Group (n = 21)
Autonomic	0	1	0	0	0	0	0	1
Cardiovascular	0	2	1	0	0	0	2	1
Delirium	0	0	1	0	0	0	0	0
Dizziness/lightheadedness, syncope	0	2	0	1	1	1	0	0
Fall	0	0	1	0	0	1	1	0
Gastrointestinal tract	0	1	0	1	4	1	2	1
General	0	0	0	0	2	1	1	1
Neurological	0	0	0	1	0	0	0	1
Psychiatric	0	0	0	2	1	1	1	2
Respiratory	0	0	0	0	1	0	0	0
Urinary tract infection or nocturia	0	0	1	0	1	0	0	2
Total	**0**	**6**	**4**	**5**	**10**	**5**	**7**	**9**

*Data are given as the number of patients.

After competition of single blind phase, the participants were signified to randomly using a random number generating computer program, to the selective serotonin reuptake inhibitor. This study implemented by a random allocation and by communicate with telephone to study operatives. [9]In this 65 mg/d week later the dosage was increased. Adverse effects were allowing for only downward titration for after 6 week study. Sertraline dosages were increased with the concern of doctor and dosage was 170 mg/d or highest tolerated dose. Clinical follow-up and outcome assessment occurred every 3 weeks. Brief telephone contact was made weekly for education, encouragement, and emotional support. Adverse effects and adverse events were recorded at each follow-up[2,3].

SUMMARY*:*

Older adults with a range of mental health problems can benefit from cognitive-behavioral therapy. Empirical support exists for using CBT alone or in combination with appropriate

medications for the treatment of depression and generalized anxiety disorder. The majority of CBT programs developed for older adults adjust the standard manuals and recognize that the effectiveness of therapy may be limited in cases of comorbid personality disorder and active substance abuse.[8] Health professionals in BC wishing to pursue training in cognitive-behavioral therapy can do so through the Change ways and individual health authorities. Patients seeking therapy can do so through various provincial health service programs and private providers. This study shown impact of anxiety and nervousness on neurocognitive and cardiovascular health of older people and identifying neuropsychiatric changes 75 % in accurate values and it might be associated with beta-amyloid.

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