

Case Report

Apparent Regression of Symptoms of Alzheimer Disease Treated with a Combination of Medication and a Food Additive Mixture

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Abstract

An unusual case of reduction in the symptoms of Alzheimer disease (AD) is described as a new finding showing unexpected retention of memory. Presenting with an NHS consultant diagnosis of vascular dementia in 2016 with no formal treatment given, the patient, who was known to the author AC, started taking a specific food additive and supplement mixture in July 2017. This was associated with some reduction of previous confirmed vascular dementia-related psychotic behavior but no improvement in his seriously reduced cognition. In October 2017 the consultant diagnosis was changed to vascular dementia with AD and medication with donepezil was commenced. One month later an enhanced food additive mixture was also commenced in addition to donepezil. Rapid improvement in cognition followed with apparent return of memory to a surprising extent over a period of four months with improvement continuing to date.

Keywords: Alzheimer, anti-cholinesterase, dementia, regression, nutrition

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It is generally accepted that both AD and the accompanying memory loss is irreversible due to apoptosis of neurons.

^[1] Although current hypotheses implicate an accumulation of brain amyloid- β peptide and hyperphosphorylated tau protein in the pathogenesis of AD, the etiology of the disease remains unclear. Mitochondrial dysfunction has been identified as an early event in AD pathogenesis, reflected by reduced metabolism, disruption of Ca^{2+} homeostasis and increased levels of reactive oxygen species, lipid peroxidation and apoptosis.^[2] This report describes a case of apparent recovery from some of the symptoms of AD with retention of pre-diagnosis memory to an unexpected extent following treatment with a combination of medication and a food additive mixture.

This case may not only highlight the efficacy of this treatment approach but also suggest additional insights into AD pathology (neuronal malfunction rather than neuronal apoptosis) worthy of further investigation.

Case Report

An 80-year-old active male, retired for 15 years from a career as a research chemist, began to show symptoms of loss of memory and aimless activity. Over a period of 15 months his condition deteriorated and in 2016 a diagnosis of vascular dementia was reached for which no treatment was offered. Eight months later he was detached from reality to the extent of not knowing his wife or family, wandering the streets looking for his house although he lived with his wife

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in the house they had occupied for 50 years. He became uncooperative because of frustration and what he saw as unhelpful but unknown people around him.

Diagnosis and Treatment

The patient received an MRI scan for a suspected transient ischemic attack but the scan did not confirm this as a diagnosis. He was treated with amlodipine 5 mg, clopidogrel 75 mg and atorvastatin 20mg daily. In July 2017 he began a daily oral intake of PIPmixN – a mixture of fish and other oils, food additives and supplements (Table 1) – which has been found to have disease modifying function in cases of Parkinson’s disease. PIPmixN has been given free of charge to people with Parkinson’s disease participating in an informal long-term trial over 10 years without reports of any ill-effects. The basis for it is to provide the nutrients for brain repair.^[3-7] Many users reported improvement in speech and writing, fine motor control, reduction of constipation, less joint stiffness of movement, the return of facial expression and reduction of depression. This informal trial is unpublished. Recent published work shows a similar outcome.^[8] A major ingredient in this PIPmixN is palmitoyl ascorbate which has been reported to have anti-angiogenic, anti-inflammatory and anti-oxidant properties and is lipid soluble and effective in passing the blood/brain barrier.^[9-11]

Normally palmitoyl ascorbate would be quickly broken down by pancreatic lipases but the combination of substances in PIPmixND includes known and probable lipase inhibitors; trehalose, baicalein. Donepezil is also an enzyme inhibitor. These may have the potential to improve the direct absorption and transport of antioxidants to the brain.^[12-14]

The intake of this mix by the patient with vascular dementia was associated with an apparent reduction in symptoms of lack of cooperation but still left the other symptoms unabated. In October 2017 the patient’s diagnosis was changed to vascular dementia with AD and his con-

sultant prescribed donepezil (Aricept®, Eisai) 10 mg daily. The diagnoses of vascular and Alzheimer dementia were arrived at after tests at NHS clinics and the authors had no part in them. This treatment with donepezil resulted in a subjective improvement in memory and function and also a reduction in the frustration he felt. In November 2017 he started to take a modified PIPmixND which is the same as the previous PIPmixN but with baicalein extract added. Based on non-clinical observations, baicalein is reported to have the property of slowing or stopping the formation of amyloid in neurons.^[15] On this basis it seemed possible that baicalein might also help to reduce the level of amyloid already present in a brain affected by AD.^[16] He continued taking donepezil and other medication as prescribed.

Outcome and Follow-up

From the point of the subject receiving modified PIPmixND, progress in returning cognitive ability was initially rapid and continued steadily until June 2018. Thereafter there were occasional signs of further improvement in cognition and returning memory. He is now finding himself frustrated at the lack of further progress proving that a perception of what memory should be available to him persists. This has been noticed in other cases of dementia – people know what they ought to be able to recall but cannot find it. From January 2018 the patient was reported being able to recognize and communicate meaningfully with his family, neighbors and professional attendants. He could hold a conversation in person or by phone. He attempts cross-words, other word puzzles and sudoku. He uses talking books, remembers many holidays and events, discusses his former hobbies and occupation to the extent that his close family have remarked that he is in many ways “restored”. He has been able to walk unaccompanied up to half a mile to different local shops to purchase various items and this includes crossing roads and negotiating junctions thus

Table 1. Constituents of PIPmixN and PIPmixND modified (30-day supply)

Nutrient	Concentration	Source
Palmitoyl ascorbate (E-304)	75 g	Changsha Huir Biological Tech Co. Ltd. www.phyhuir.com
EV olive oil	15 ml	Generic
EV rapeseed oil	90 ml	Generic
Lemon fish oil	175 ml	Higher Nature Ltd., Burwash Common, E. Sussex TN19 7LX UK
Organic coconut oil	60 ml	Generic
Trehalose	20 g	Generic
PIPmix ND modified (30-day supply) includes the above constituents plus:		
Baicalein extract ⁴	150 g	Xi’AN Nuojiia Biotechnology Co. Ltd. 220, Tsinghua Science and Technology Park, Xi’an High-Tech District Xi’an, China www.nuojiabio.com

proving he remembers the routes. By the end of February 2018, having been discharged from the memory clinic he previously attended, he had resumed his hobby of photography and was capable of downloading his pictures to a desktop computer having been reminded of the necessary sequence of commands. In later months he went into the city and consulted staff in the photographic store at length.

Discussion

No similar published cases have been found. It should be emphasized that the authors have had no access to the patient's NHS records and no input to his diagnoses or NHS treatment. His NHS clinicians have not been made aware of this additional treatment at the patient's request. Following a diagnosis of dementia care arrangements are made, financial support is available, and the situation is assumed to be irreversible and terminal. It is entirely understandable that in this unique situation the patient and his family feel uncertain of the unknown long-term outcome and unwilling to change the existing diagnosis which still stands.

There is no claim made of complete return to the pre-diagnosis condition; only that the patient now has a very acceptable level of cognition and memory and can hold a satisfactory conversation for 45 minutes or more without apparent stress.

The most notable outcome is the continuing return of both long and some short-term memory over a wide range of subjects indicating little loss of neurons beyond normal age changes. It could be likened to the gradual re-opening of a reference library with the books disarranged but undamaged. This development appears to be in contrast with the accepted view that neurons in the memory areas undergo apoptosis in a steady decline as dementia increases.

The fact that improvement continues (for example, he is now tackling sudoku and professional journals) may be indicative of restoration of neuronal function and suggestive that early and progressive loss of neurons due to apoptosis may have been minimal. This draws into question the apoptosis theory of AD pathology that necessarily indicates irreversible deterioration. Neuronal apoptosis may be a later event in AD pathology than previously thought or may occur in a sporadic or non-progressive manner. Indeed, neurons in normal use are capable of excreting amyloid as 'phagosomes' through cell walls^[17] and therefore may be available to contribute to normal neurological functioning after the onset of AD, under the specific therapeutic conditions. Furthermore, a growing body of scientific evidence suggests that enrichment of certain nutritional compounds in the brain may reduce the risk of AD.^[18] A recent publication reported positive outcomes

for patients with AD who consumed a combination of xanthophyll carotenoids plus fish oil. Xanthophyll carotenoid concentration increases were associated with slower AD progression, with carers reporting functional benefits in memory, sight and mood.^[18] The connection between gut health, nutrients consumed, and disease progression is becoming accepted.^[19–21] A further recent study examined the role of astrocytes in response to proteotoxic stress in neurons associated with Alzheimer's disease. Inhibition of NF- κ B in astrocytes was found to be sufficient to delay neurodegeneration induced by proteotoxicity in neurons.^[22] As a powerful anti-oxidant palmitoyl ascorbate (E-304) is known to have anti-inflammatory properties suppressing TNF α and NF- κ B so this effect in astrocytes could account for part of the outcome in this case.

Whilst no conclusions can be drawn from a single case, one suggestion is that the nutritional mix may have restored neuronal function in still viable neurons (i.e., baicalein may assist with amyloid clearance and thus restoration of normal function) whilst donepezil concurrently restored normal neurotransmission by improving concentrations of scarce acetylcholine. It is not usual for donepezil or other cholinesterase inhibitors alone to result in such a marked improvement in a short time^[17–24] and the combination of the two treatments may have triggered the dramatic improvement in symptoms observed in the present case.^[17, 25]

Finally, if AD ultimately becomes treatable and a degree of normal cognitive functioning is restored, there may be significant legal, social, financial and personal implications that must be considered. Many of these are predicated upon the assumption that, for people with AD, there is only progressive decline and death as the outcome. These implications must be considered in view of the observations in this case study and others such as those of the xanthophyll carotenoids plus fish oil study.^[18] Overall, the observations described suggest the need for further investigation into the mechanisms of action of the various nutrients and their interaction with donepezil. Further research with other cases receiving donepezil and the mix is in progress. There are no similar published cases. This is a unique and as yet incomplete recovery from dementia diagnosed as vascular dementia with AD.

Disclosures

Informed Consent: Written informed consent was obtained from the patient for the publication of the case report.

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