

Alzheimer's Disease and Intestinal Microbiota Transplantation

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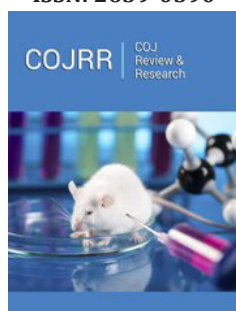
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Abstract

Alzheimer's Disease (AD), will be an epidemic in 2050, requires considering the different alternatives that exist, to prevent young people and treat the affected patient, which is so disabling. If the Intestinal Microbiota (IM) modulates neurological development, it's not necessary to consider this super-organ in the management of neurodegenerative entities? Being Alzheimer's Disease (AD) the most frequent dementia in industrialized countries, have an impact on it. Intestinal Microbiota Transplantation (IMT) like methodology, with minimal risks in expert hands

Keywords: Alzheimer disease; Intestinal microbiota; Intestinal microbiota transplantation; Microbiome; Fecal microbiota transplantation

Abbreviations: AD: Alzheimer Disease; IM: Intestinal Microbiota; IMT: Intestinal Microbiota Transplantation; M: Microbiome; FMT: Fecal Microbiota Transplantation

Introduction

One of the diseases where extreme suffering appears in the family is Alzheimer's, since terrifies! the continuous thought of what will happen to my family member, if he no longer takes care of himself, despite often drawing a smile? And as they will not panic, if patients with this condition are lost, even inside their own room; they make extravagances or are so scared, since they consciously - some of them - realize, even if little, what is happening, a fact that complicates the family environment even more. When alterations occur in the composition of the Intestinal Microbiota (IM), diseases with Alzheimer's, Depression and Parkinson may occur. For that reason, it is highly significant to ensure that human beings have the Intestinal Microbiota (IM) as healthy as possible; otherwise, dysbiosis will wreak havoc on health [1]. And how to regulate such a frequent condition in old age, if more than 5 million cases appear every year [2]. We suggest that you have to start treating people from an early age, as it's at these stages, where it has been seen that the Intestinal Microbiota (IM) modulates neuronal development. It is a fact, that the intestinal flora and the use of antibiotics influence brain activity and can cause alterations [3].

In Alzheimer's Disease (AD), dysbiosis plays a significant role in the pathogenesis of this, as do alterations in the brain-intestine-microbiota axis. Most of the cases are not related to genetic or family causes. There are brain cells that secrete peptides and other possibly neurotoxic substances and, when the individual ages, increase secretion [4,5]. Likewise, Zhao

Y et al. [6], and his group determine that the non-coding RNA that is derived from the Microbiota through endothelial barriers can be affected by sncRNA or miRNA, which are mediated by the human Microbiome (M).

Although more than 99% of IM are anaerobic bacteria, little fungi, archaea, protozoa and other microorganisms that make up the rest of the Microbiome (M) have been studied, due to the technical difficulties that this represents. The foregoing shows, that perhaps, therein lie, much of the solutions that are being sought today. Most cases of dementia in the elderly are represented by patients who develop Alzheimer's Disease (AD), and it is likely that by 2050 it will appear in one in 85 people, worldwide [7]. Due to this, without a doubt, we must accelerate the processes that tend to improve this, which will practically be an epidemic [8]. For this, it is worth trying to prevent as much as possible, at the time of neurological development, and use: personalized diets-probiotics, prebiotics, symbiotics-stress management and modulation of the neurological system with microbiota, since the diet affects the structure and the metabolism of the human intestinal microbiome (M), the Intestinal Microbiota Transplantation (IMT) may not necessarily be used [9-11], but a simple retention enema [12], with about 250 milliliters of excellent microbiota, can help in the highest degree. It has not been conclusive that the Mediterranean diet and some nutrients such as antioxidants, vitamins B, omega-3, have a beneficial role in Alzheimer's Disease (AD); However, it is possible that when these products are administered in older people and not in young people, the information can be skewed [13].

Although little is known about the results of Intestinal Microbiota Transplantation (IMT), in Alzheimer's patients, it has been seen that in mice, treatment with Fecal Microbiota Transplantation (FMT) could improve cognitive deficits and reduce amyloid- β brain deposition (A β) [14]. And as the human Microbiome (M) will not be important, if it exceeds approximately 100 times the cells [15,16]. But not only does the Microbiome (M) improve personalized diets-probiotics, prebiotics, symbiotics-stress management and modulation of the neurological system with microbiota, there are also circumstances that make it worse, such as germ-free animals and antibiotics, which alter intestinal physiology and translate altered cognitive behavior, increasing the risks of Alzheimer's Disease (AD) [17]. Despite the economic burden that currently exists when managing Alzheimer's multifactorial, we consider that Intestinal Microbiota Transplantation (IMT) is an emerging procedure with a very promising future [18]. There is no doubt that the Intestinal Microbiota (IM) plays a significant role in many conditions, including those of the Psycho-Neurological System; within which Alzheimer's is included. This role is exercised, either through specific metabolites or nutrients, endocrine modulation, as well as energy absorption [19].

Is there a coincidence between Alzheimer's Disease (AD) and Type 2 Diabetes Mellitus? This question has an answer and it is determined that there is a coincidence between both pathologies [20]. This coincidence has been determined by the observations that exist that the same drugs improve. Also, in both there is

insulin resistance, dysbiosis and altered metabolism [21]. On the other hand, there is the possibility of developing Alzheimer's Disease (AD), in people with type 2 Diabetes Mellitus [22]. Even if you have to be very careful with the management of insulin in the Alzheimer's patient, so they are trying to use it intra-nasally [23]. Interesting is the claim that the production of atypical amyloids occurs in Alzheimer's Disease (AD) [24]. That is also produced by microorganisms, so the link between Intestinal Microbiota (IM) and this degenerative disease can be considered, by this fact. These microorganisms, in addition to amyloids, produce complex immunogenic mixtures of lipopolysaccharides, which translates into Alzheimer's Disease (AD) and its consequences [25]. It's increasingly recognized that microorganisms have much to do with the genesis of the disease, as well as aging. On the other hand, as a very interesting coincidence, the changes that are generated in morbid processes caused by pathogenic microorganisms are similar to those that occur in Alzheimer's Disease (AD) [26].

All of the above is done through perfectly established bidirectional signals, which use complex systems that go from the host to the Intestinal Microbiota (IM) and, vice versa [27]. Now, under this whole new context, can we affirm that the use of the Intestinal Microbiota (IM) in Alzheimer's patients improves it? I think this is a key question, the logical answer, is given to us by all the knowledge mentioned above, which make this answer tangible [28]. It's enough to reread the concepts expressed by different authors regarding the tremendous bidirectional communication, mediated by several elements, to support the above [29-32].

Conclusion

- A. Has to do the alterations in the composition of Intestinal Microbiota in the generation of Alzheimer's Disease (AD).
- B. We must ensure that human beings have the Intestinal Microbiota (IM) as healthy as possible. Otherwise, dysbiosis will wreak havoc on health.
- C. We suggest treating potential people with Alzheimer's Diseases (AD) at an early age, as it at these stages, where it has been seen that the Intestinal Microbiota (IM) modulates neuronal development.
- D. The genetic changes of IM play a significant role in the development of the diseases in the elderly.
- E. Employ: Personalized diet-probiotics, prebiotics, symbiotics-stress management and modulation of the neurological system with Microbiota are preventive measures Alzheimer's Diseases (AD).
- F. At least, in mice, treatment with IMT can improve cognitive deficits and reduce cerebral amyloid deposition.

Conflict of Interest

The authors declare don't have affiliation or participation in organizations with financial interests.

Ethical Approval

This report does not contain any study with human or animal subjects carried out by the authors.

Informed Consent

The authors obtained informed written consent from the patients, in order to develop this article.

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