



Project description

Nowadays, brain disorders (BD) are considered incurable diseases that are affecting an increased segment of population worldwide. BD consist in three major types of medical conditions namely neurodegenerative (NDD), neurodevelopmental (DD) and psychiatric (PD) diseases, respectively. These medical conditions raise an enormous burden, in terms of both human suffering and economic cost, as suggested by McGovern Institute for Brain Research [1] and World Health Organization [2]. Neurodegenerative disorders (mainly represented by diseases such as Parkinson's, Huntington's, Alzheimer's and Amyotrophic lateral sclerosis) are associated with the progressive degradation of function and/or structure of the neurons, including their loss of functionality. They are generally associated mainly with elderly population and have both genetic and environmental causes. Neurodevelopmental diseases (mainly represented by autism, dyslexia, ADD/ADHD - Attention Deficit Disorder and Attention Deficit Hyperactivity Disorder) are associated with influence of both genetic and environmental factors, but without a well-known interconnection of them. NDD are present since childhood, but their effects are also present through adult life of patient. Psychiatric disorders (mainly represented by depression, anxiety, schizophrenia and bipolar disorder) are one the most serious and frequently of all brain diseases. The study of brain diseases is nowadays a priority of health concern at a global level. The importance of these above-mentioned medical problems from the scientific point of view is also revealed by the amount of published data in this scientific domain, solely ISI Web Of Knowledge indexes over 179 000 reports and articles when a simple search with “brain disease” keywords is performed while SCOPUS indexes over 541,450 documents in this field.

The socio-economic and cultural aspects correlated with brain diseases are mentioned in numerous scientific data [3-5], McGovern Institute for Brain Research MIT presented the exorbitant economic costs associated with the incidence of brain disorders among population. Along with the cost of treatment, other burdens such as emotional and financial are affecting not only the patients affected by the disease, but their family and caretakers as well [6]. It was estimated that the total cost associated with brain disorders was nearly €400 billion per year in 2004, solely in Europe, including costs of treatment and care and the lost productivity. This amount of money was estimated to be twice the one associated with the one involved in treating cancer. A completion of the data was also reported in 2011 by the same group of researchers [5] and evaluated the total cost to be nearly €800 billion for 2010, where €480 billion was represented to direct costs and €320 billion due to economic effects. Cultural aspects are involved in both trying to create a good climate for patients but for caretakers as well, along with social programs for reintegration in groups [7].

References

1. <http://mcgovern.mit.edu/brain-disorders/by-the-numbers>
2. http://www.who.int/healthinfo/global_burden_disease/en/
3. Olesen J, Leonardi M. The burden of brain diseases in Europe. Eur J Neurol. 2003;10(5):471-7.



UMFT

Universitatea de
Medicină și Farmacie
„Victor Babeș”
din Timișoara

UEFISCDI PROJECT PN-II-RU-TE-2014-4 -184/2015

Title: Neurodegeneration and Brain Diseases: A new instrumental approach of analysis and development of pharmaceutical formulations

4. Andlin-Sobocki P, Jönsson B, Wittchen HU, Olesen J. Cost of disorders of the brain in Europe. *Eur J Neurol*. 2005;12(1):1-27.
5. CDBE2010 Study Group, Cost of disorders of the brain in Europe 2010. *Eur Neuropsychopharmacol*. 2011;21(10):718-79.
6. Andersen, C.K., Wittrup-Jensen, K.U., Lolk, A., Andersen, K., Kragh-Sørensen, P. Ability to perform activities of daily living is the main factor affecting quality of life in patients with dementia. *Health and Quality of Life Outcomes*. 2004;2:7-12.
7. Karlawish, J.H., Zbrozek, A., Kinoshian, B., Gregory, A., Ferguson, A., Low, D.V., Glick, H.A. Caregivers' assessments of preference-based quality of life in Alzheimer's disease. *Alzheimer's and Dementia*. 2008;4(3):203-211.