Selegiline vsrotigotine monotherapy research paper example

Sociology, Community

\n[toc title="Table of Contents"]\n

\n \t

\n[/toc]\n \n

Selegiline Vs Rotigotine Monotherapy

Purpose statement

This paper seeks to explore on the effectiveness of Rotigotine monotherapy when compared to Selegiline monotherapy in the treatment of adult patients who manifest with Parkinson disease. Methodical reviews of studies carried out in the previous past, within a period of five years, with adults who manifest with Parkinson as the target population will be utilised. The prevalence and incidence rates will then be presented based on who is frequently affected by the disease. Consequently discussions will be made based on the findings from reviewed studies, aimed at ascertaining effectiveness of Selegiline and Rotigotine Monotherapy.

Prevalence and incidence rates

The American Parkinson’s disease Association estimates that about 1. 5 million people in the U. S. are living with Parkinson’s disease (Diane, and Venable, 2008). Approximately 1-2% of people aged 60 and 3-5% of the population aged over 85 are affected. The incidence of Parkinson’s disease is

fairly distributed among men and women. The disease is however more prevalent in men for patients older than 60 years. In the U. S. alone, 50, 000 new cases are reported annually and the numbers are expected to rise as the population ages (Diane, and Venable, 2008).

Discussions

Parkinson’s disease occurs when dopamine production is impaired. This leads to an impaired neurotransmission in the basal ganglia. Nerve cells fire uncontrollably causing loss of smooth muscle activity. The primary pathology of PD is the reduced level of dopamine in the corpus striatum because of the failure of dopamine producing cells in the substantia nigra (Stefani et. al., 2012). This paper will examine the efficacy of the use of either Rotigotine or Selegiline independently in the management of Parkinson’s disease in adults.

Since there is no cure for Parkinson’s disease, treatment is aimed at reducing symptoms to improve the quality of life of the patient while minimizing any medication related side effects. The aim of the treatments used is to increase the amount of dopamine in the brain. The agents work by directly increasing levels of dopamine in the brain, stimulating dopamine receptors or by slowing down the metabolism of dopamine to stabilize dopamine levels in the blood (Diane, and Venable, 2008). Rotigotine a dopamine agonist is administered through use of Neupro transdermal patch. It can further be used in monotherapy or together with Levodopa, which is converted by the brain into dopamine. Selegiline is a monoamine oxidase type-B (MAO-B) which works by limiting the action of oxidase preventing the breakdown of dopamine (Diane, and Venable, 2008).

The universally accepted way of testing drug efficacy in PD is to control the motor symptoms in patients. The patient’s motor symptoms are measured from baseline to endpoint and scores given where 44 questions are asked with each measured on a 5-point scale. Scores are rated from 0 (no disability) to 199 (total disability). Research is done by studying a parallel group and a placebo controlled group. Using MDS EBM approved standards; there is enough clinical evidence that 9 anti-Parkinson drugs can be efficacious if used as monotherapy to treat early PD symptoms. These are Levodopa which is converted to dopamine, six dopamine agonists (Dihydroergocryptine (DHEK), Pergolide, Piribedil, Pramipexole, Ropinirole and Rotigotine) and two MAO-B inhibitors (Selegiline and Rasagiline)

Rotigotine is effective in treating early symptoms of Parkinson disease. The patch is applied to release rotigotine continuously for 24 hours (Schelleret. al, 2009). The drug possesses antidepressant effects and may therefore be used to treat symptoms of depression. Dopamine agonists like Rotigotine when used in monotherapy have been found to reduce PD symptoms for 3 years reducing the risk of developing dyskinesia (Scheller, et. al. 2009). These agonists were found to be efficacious as a monotherapy in treating early PD according MDS EBM review. It also has fewer side effects compared to levodopa although at advanced stages of Parkinson’s it becomes necessary to use both therapies. Side effects include reaction on the patch area, nausea, vomiting drowsiness and insomnia. A common caution given to patients is to avoid operating machinery while using the patch.

Selegiline is the most widely used MAO-B inhibitor. It increases the half life of dopamine in the brain as is therefore often used with levodopa. When administered to patients in early stage PD as a monotherapy, studies indicate that it delays the need to use Sinemet for as long as 9 months. Parkinson studies conducted in a controlled group in 2002 found that compared to the placebo group, there was significant improvement in patients using Selegiline and Rasagiline. When introduced later in disease progression together with levodopa it improves motor functions in 50-75% of patients (Diane, and Venable, 2008). Since the drug is considered to be moderately effective, it is better prescribed as an adjunct rather than a monotherapy.

References

Diane, S. A. and Venable, S. (2008). Drug Therapy in Nursing. Lippincott Williams &
Wilkins

Hardimam, O. &Dohety, C. P. (2011). Neurodegenerative Disorders: A Clinical Guide.
Springer

Scheller D, et. al. (2009). " The in vitro receptor profile of rotigotine: a new agent for the
treatment of Parkinson's disease". Naunyn-Schmiedeberg's Archives of Pharmacology 379 (1), 73–86

Stefani A, et. al. (2012). Successful subthalamic stimulation, but levodopa-

induced

dystonia, in Parkinson’s disease. Rome: IRCCS Fondazione.