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PRESENT CIRCUMSTANCES AND FIND OUT UTILITY OF METHYLCOBALAMIN AND PREGABALIN IN NEUROMUSCULAR PAIN

Dilip G. Maheshwari¹, Anushree H. Raval²

¹Head of department, Department of quality assurance and pharmaceutical analysis, L.J. Institute of Pharmacy, Ahmedabad - 382210, India

²Reserach scholar, Department of pharmaceutical management and regulatory affairs, L.J. Institute of Pharmacy, Ahmedabad - 382210, India

*Corresponding author: dgmaheshwari@gmail.com, ravallajja@gmail.com

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ABSTRACT

As par the present circumstances more number of people have neuromuscular pain. There is no any pharmaceutical therapy is available to cure pain completely and that present therapy show serious toxic side effects. Clinically prove that Methylcobalamin and Pregabalin have good efficacy and tolerability with less common side effect like tiredness, nausea etc. As per the collected present environment data concluded that Methylcobalamin and Pregabalin highly preferred and recommended by present orthopedic physician than the other present drug therapy.so there is more utility of Methylcobalamin and Pregabalin in neuromuscular pain.

Keywords – Neuromuscular pain-1; Methylcobalamin-2; Pregabalin-3.

1. INTRODUCTION

Neuromuscular pain: Neuromuscular pain is associated with different type of neuromuscular disease is characterized by impairment of the central or the peripheral nervous system, the central nervous system includes the brain and spinal cord and peripheral nervous system include muscles, nerve-muscle junction ¹.

Neuromuscular therapy : There is no any proper pharmaceutical therapy available to eradicate pain completely as per International Association for the Study of Pain, First line treatment Tricyclic antidepressants but it adverse effects cardio toxicity, dry mouth, hypotension, constipation, and urinary retention and second line drug treatment is opioid analgesic but it leads risks of hypogonadism, immunologic changes and third line treatment of drug is antiepileptic medication but have fewer efficacies².

Methylcobalamin: Methylcobalamin is dark red crystalline powder, helps to maintain glutamate activity in brain and improves brain cell activity, and protein synthesis for healthy nerve cell maintenance, and improve the damage neuron regeneration. Methylcobalamin is neurologically active form of vitamin B₁₂³. It is activate coenzyme 5-methyltetrahydrofolate-homocystine methyl transferase used by vitamin B12 and synthesis of methionine which help to reduce the pain and maintain proper nerve function and effective in neuron regeneration⁴.

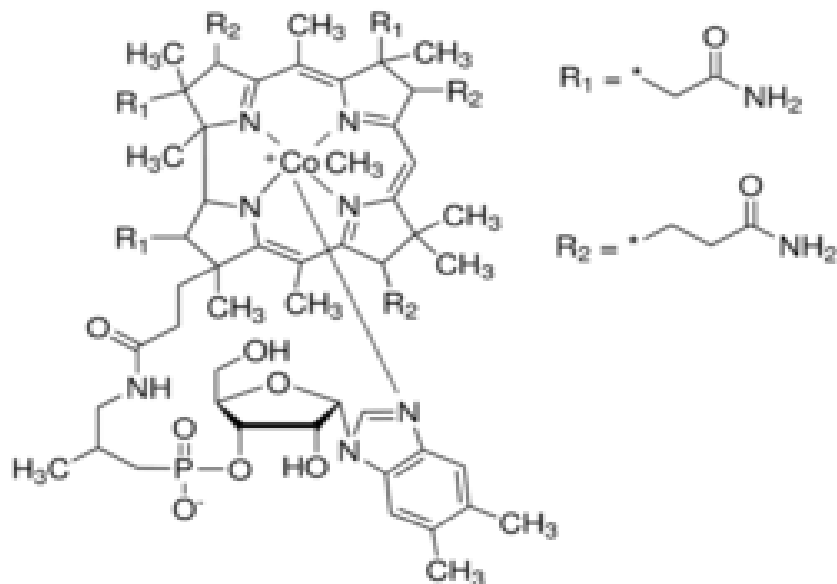


Fig.1 : Chemical structure of Methylcobalamin⁵.

Pregabalin: Pregabalin is an anticonvulsant drug used in neuropathic pain treatment and management of neuromuscular disease pain⁶. Pregabalin binds to calcium channels on nerves and modify the release of neurotransmitter Reducing communication between nerves may contribute to pregabalin effect on pain⁷.

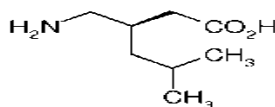


Fig.2: Chemical structure of pregabalin⁸

As per present scenario 60% of Indian population suffers from, 84% of people suffer from low back pain, and 77% of population suffers from Becker muscular atrophy. Following %of people in India are suffer from neuromuscular pain⁹.

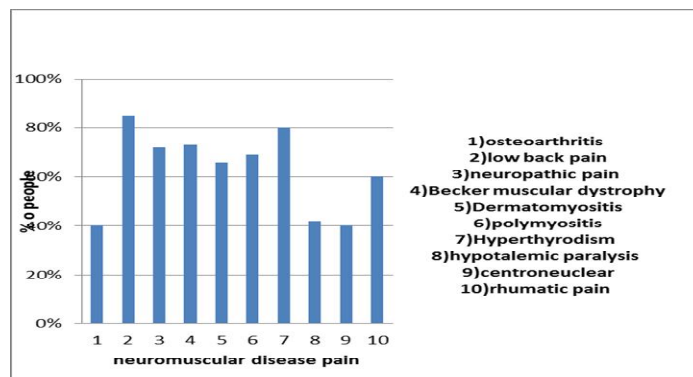


Fig.3

Combination use of Methylcobalamin and Pregabalin have good efficacy, tolerability with less common side effect like dizziness, drowsiness, nausea and clinically prove that combination use of Methylcobalamin and Pregabalin improves positive and negative symptoms associated with pain . 40% of the Indian population in the age group of 70 years or above suffers from osteoarthritis¹⁰. 80 –

85% of people suffer from a significant low back pain at some point of their life time¹¹. 42.9% of Indian population was suffering from hypokalemic paralysis¹². Up to December 2009 over 13 million people in India suffer avoidable pain¹³.

57% of male and 43% of female suffer from neuromuscular diseases, 70% of the parents reported chronic pain in their children with neuromuscular disease¹⁴. Pregabalin is effective in the treatment of peripheral and central neuropathic pain, pregabalin 150 mg daily provided for treatment up to one week result show that reduction in pain intensity and well tolerated with less common side effect¹⁵.

Recent study show that Methylcobalamin is improves nerve conduction, promoting regeneration of damages nerves, eliminate spontaneous pain, it cure the no specific low back pain 80% and neck pain 30-50% in adults within 12 months¹⁶.

Sustained-release Pregabalin with Methylcobalamin, 384 patients receives fix dose 75mg Pregabalin and 150 mg Methylcobalamin twice in a day for two weeks and in result found that 95% patients have significant improvement in both the positive and negative symptoms associated with neuropathy, in Indian patients it was well tolerated¹⁷.

2. MATERIALS AND METHODS

2.1 Materials

Literature review is use for study the present circumstance of related to the methylcobalamin and pregabalin in neuromuscular pain.

2.2 Method

SWOT analysis is performed to find out utility of methylcobalamin and pregabalin in neuromuscular pain. Find out strength, weakness, opportunity and threats for drug molecule methylcobalamin and pregabalin. To carry out research work with help of questionnaire by visiting orthopedic physician.

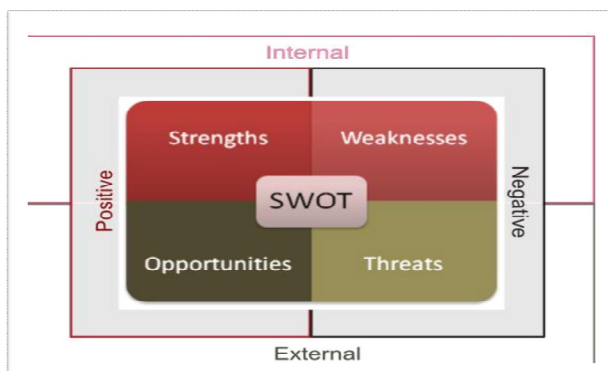


Fig.4

SWOT analysis diagram show Strength, Weakness, Opportunity and Threats; SWOT analysis is a useful technique for understanding strengths and weaknesses and identifying the opportunities and the threats¹⁸. SWOT is tool which help in analysis of the present environment¹⁹.

3. RESULTS AND DISCUSSION

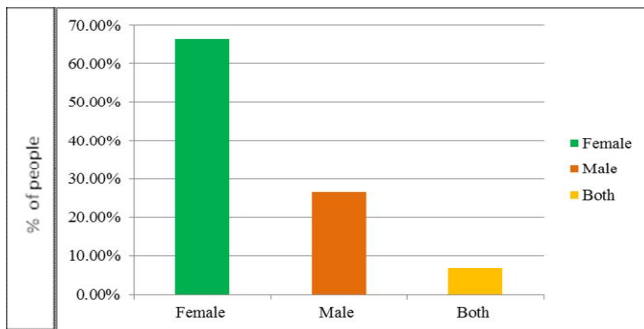


Fig.6

Graph indicates 66.6% of female have neuromuscular pain, which is more than male. 26.6% of male have neuromuscular pain.

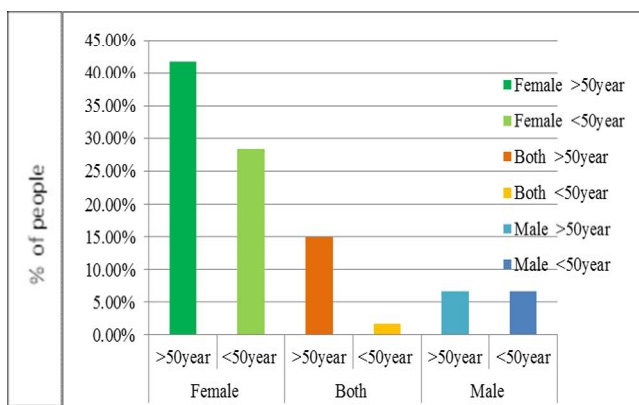


Fig.7

Graph indicates 41.6% of female have more neuromuscular pain with age above 50 years and there is 28.33% of female have neuromuscular pain with less than age 50 years. In case of male 6.66% suffer from neuromuscular pain which have same no of above and below 50 years age.

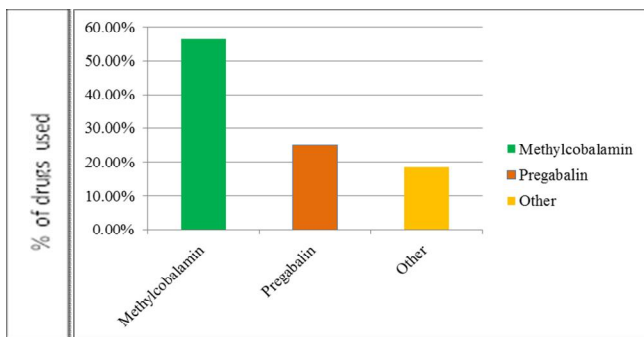


Fig.8

Graph indicates for the primary treatment 56.6% and 25% of physician prescribe Methylcobalamin and Pregabalin respectively than other present drugs.18.33% orthopedic physician prescribe another drugs.

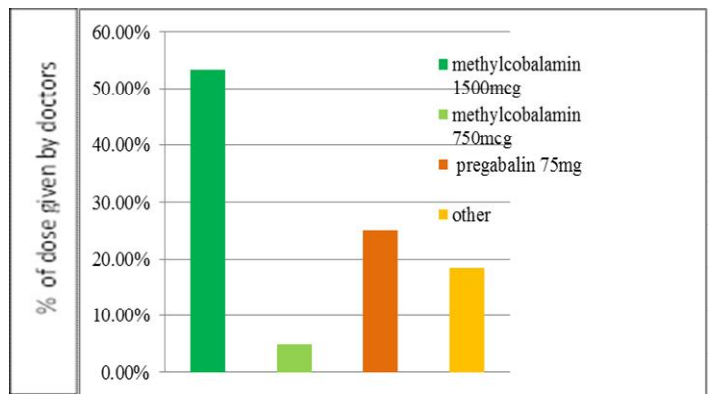


Fig.9

Graph indicates 53.3% of physician preferred 1500mcg dose of Methylcobalamin, as per 5% physician preferred 750mcg and 25% orthopedic physician preferred 75mg Pregabalin dose.

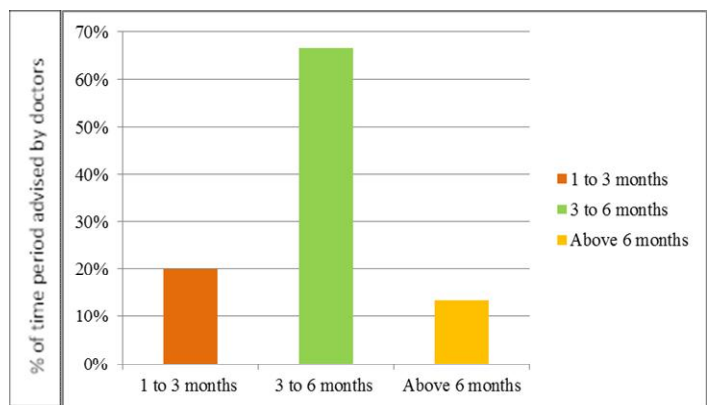


Fig.10

Graph indicates as per 20% of orthopedic physician required minimum 1 to 3 months for the treatment of pain, as per 66.6% of physician required minimum 3 to 6 months for the treatment of pain, and as per 13.33% of physician required more than 6 months.

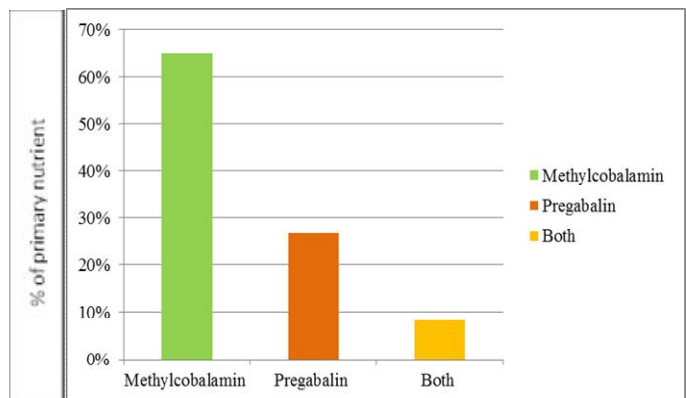


Fig.11

Graph indicates as per 65% of orthopedic physician Methylcobalamin is selected as primary nutrition for cure neuromuscular pain, as per 26.6% preferred Pregabalin as a primary nutrition to cure neuromuscular pain, and as per 8.33% physician preferred both drugs to cure pain.

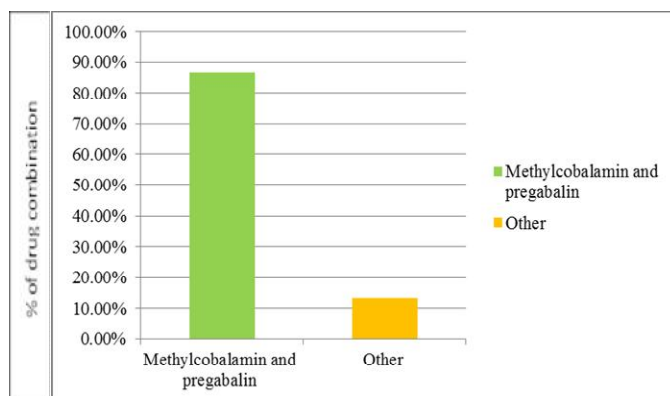


Fig.12

Graph indicates more than 86% of physician preferred combination use of Methylcobalamin and Pregabalin.

And 13.33% of physician preferred other drugs to cure neuro muscular pain.

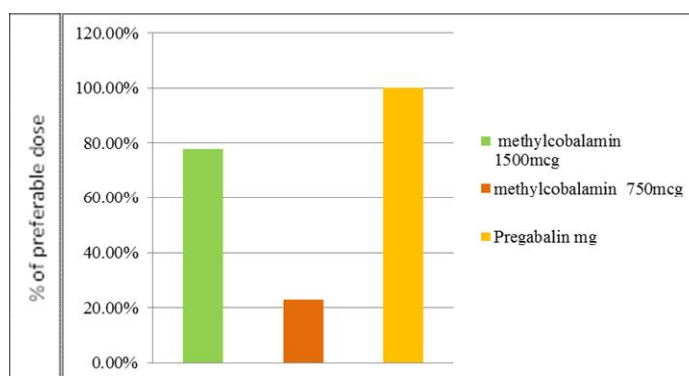


Fig.13

Graph indicates 77.95% of physician preferred 1500mcg dose strength of Methylcobalamin, and as per 23% of physician prescribe 750mcg dose strength of Methylcobalamin and 100% of all physician preferred 75mg of Pregabalin.

SWOT data: From the collected marketed data strength, weakness, opportunity and threats for drug molecule methylcobalamin and pregabalin are follows,

Strength: strength of drug molecule Methylcobalamin and Pregabalin are:

- i)Methylcobalamin and Pregabalin are more recommended than other drugs by orthopedician.
- ii)More number of orthopedic physician are recommend 1500mcg dose of Methylcobalamin as being effective and 75mg dose of Pregabalin as being effective.
- iii)Methylcobalamin is highly primary selective medication for neuromuscular pain than present other drugs.
- iv) Combination of Methylcobalamin and Pregabalin is highly prescribed medicine by orthopedic physician than others combinations of drugs.

Weakness: weakness is not applicable because large numbers of orthopedic physician are very much recommended and preferred to both drugs Methylcobalamin and Pregabalin.

Opportunity: Opportunities for drug molecules are:

i) Due to more recommendation of Methylcobalamin there is great scope for Methylcobalamin than other present drugs for the treatment of neuromuscular pain.

ii) Methylcobalamin and Pregabalin both drugs are in together highly recommended by orthopedic physician than other present drug combination for better treatment of neuromuscular pain.

Threats: Methylcobalamin and Pregabalin both drugs are very popular and highly recommended by orthopedic physicians it is unlikely that they will face any threats from the other manufacturer of the same formulations.

4. CONCLUSION

As per the present circumstance there is no any pharmaceutical therapy is available to eradicate pain completely but clinically prove that Methylcobalamin and Pregabalin in combination more effective and easily accepted by patient with less common side effect and from the market survey data Methylcobalamin and Pregabalin are more preferred and highly recommended by orthopedic physicians for the treatment of neuromuscular pain than other present drugs so Methylcobalamin and Pregabalin have more utility in neuromuscular pain as per collected data.

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