Effectiveness of Nash Trio of Sleepiness (Antimonium Tartaricum, Nux Moschata and Gelsemium) in management of Hypersomnia in theage group of 15 to 35 years: A case series

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Abstract—

- **Background:** Hypersomnia or Hypersomnolence is an inability to stay awake and alert during major waking episodes, resulting in periods of irrepressible need for sleep or unintended lapses into drowsiness or sleep. It is a neurobiological disorder where there is a disparity between sleep inducing and alertness promoting neurotransmitter which can be evaluated using ESS scale. Hypersomnia may impact on the day-to-day activities of an individual. Treating this disorder by conventional line of treatment may be expensive whereas, homoeopathic treatment might be cost-effective. This study shows the effectiveness of Nash Trio of sleepiness to manage the cases of Hypersomnia**.**
- **Objective:**
  - To study effectiveness of Nash trio of sleepiness in management of hypersomnia in the age group of 15 to 35 years.
  - To identify the most commonly used homoeopathic medicine of Nash trio of sleepiness in our study.
- **Materials and method:** This study includes a case series of 45 cases prescribed with Antimonium Tartaricum, Nux Moschata and Gelsemium i.e., the remedies of Nash trio of sleepiness on the basis of Leaders in homoeopathic therapeutics by E. B. Nash. The study was conducted in M(N)HMC opd, D. N. Patil High School and Jr. college and Siddeshwar Clinic, Malegaon. Paired T test was done to analyze the results statistically.
- **Result:** Out of 45 cases, 88.89% showed improvement while 11.11% cases were not improved.
- **Conclusion:** Nash Trio of sleepiness is effective in managing the cases of hypersomnia.

***Key words*— Hypersomnia, ESS, Nash Trio of Sleepiness**

I. INTRODUCTION

1. Sleep Physiology:

Sleep is the natural periodic state of rest for mind and body with closed eyes characterized by partial or complete loss of consciousness. An average adult requires 7-9 hours of sleep, while, a growing child requires 12 – 14 hours of sleep [1]. Sleep comprises two distinct physiological states: non-rapid eye movement (NREM) sleep and rapid eye movement (REM) sleep. People normally cycle through four stages of NREM sleep, usually followed by a brief interval of REM sleep, 5 to 6 times every night.

NREM SLEEP (Non-Rapid Eye Movement) NREM sleep is dreamless sleepNREM sleep consists of four stages:

- Stage 1 is characterized by a decrease in brain wave activity, which is characteristic of relaxed wakefulness with the eyes closed. There is slow rolling of the eyes and electromyogram (EMG) activity is low to moderate, which is comparable to a “drowsy” state. This is a

transition from wakefulness to sleep and occupies about 5% of time spent asleep in healthy adults.

- In stage 2 eye movements becomes rare and EMG activity is still low to moderate. Stage 2 is considered to be the first true stage of sleep due to the presence of „sleep spindles. This occupies about 50% of time spent asleep
- Stages 3 and 4 are known as "slow wave" sleep because they are associated with low frequency, synchronized waves on the electroencephalogram (EEG). This is the deepest level of sleep and occupies about 10% - 20% of sleep time. This sleep is exceedingly restful and is associated with a decrease in peripheral vascular tone. There is also a decrease in blood pressure, respiratory rate, and basal metabolic rate.

Table 1 Stages of sleep cycle [2]

Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
4-5% Light sleep, muscle activity slows down. Occasional muscle twitching.	**45-55%** Breathing pattern and heart rates low. Slight decrease in body temperature.	**4-6%** Deep sleep begins. Brain begins to generate slow delta waves.	**12-15%** Very deep sleep. Rhythmic breathing. Limited muscle activity. Brain produces delta waves.	**20-25%** Rapid eye movement. Brain waves speed up and dreaming occurs. Muscles relax and heart rate increases. Breathing is rapid and shallow.

➢ REM SLEEP (Rapid Eye Movement):

REM sleep develops after progression through the various stages of NREM sleep. In a normal night of sleep, bouts of REM sleep, lasting 5 to 30 minutes, usually appear on the average every 90 minutes. [2]

2. Sleep Disorders

According to DSM-V TR (2013), sleep disorders are classified into 4 major sections according to their etiology:

- Primary sleep disorders
- Sleep disorder related to general medical condition
- Sleep disorder related to another mental disorder
- Substance induced sleep disorder

Primary sleep disorders comprise –

a.

Dyssomnias

b. Parasomnias

Dyssomnias include:

a. Primary Insomnia
b. Primary Hypersomnia
c. Narcolepsy
d. Breathing - Related Sleep Disorder
e. Circadian Rhythm Sleep disorder
f. Dyssomnias Not Otherwise Specified According to (Plate 2015) also called hyper somnolence or sometimes idiopathic hypersomnia(meaning that it arises from no known cause),

primary hypersomnia is a sleep disorder characterized by excessive daytime sleepiness, excessive sleep periods each day (usually taken to mean more than 10 hours) and/or an inability to achieve the feeling of refreshment that sleep usually brings (Plate 2015). Chronic sufferers may sleep up to 18 hours a day or more and still not feel refreshed upon waking. The disorder usually develops slowly over a period of years, typically starting in late adolescence, when it is often confused with normal teenage sleep issues like delayed sleep phase syndrome (Plate 2015). The essential feature of primary hypersomnia is excessive sleepiness for at least 1 month, where there are prolonged sleep episodes or daytime sleep episodes that occur almostdaily [2].

3. Pathophysiology:

The cycle of sleep and wakefulness is controlled by certain neurotransmitters. Reduction in sleep promoting transmitters causes wakefulness/alertness while increase in its activity promotes sleep.

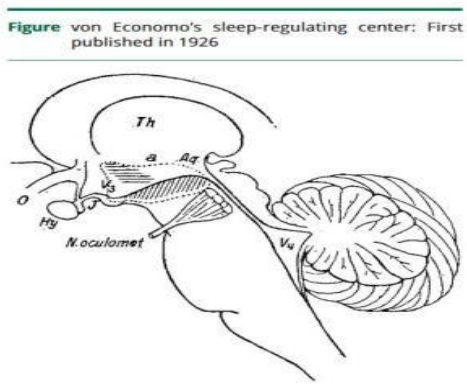

Figure von Economo's sleep-regulating center: First published in 1926

In 1930s, when Bremer first transected the brain stem of cat, he observed that sleep-wake cycle was disturbed when the transection was made between the region of Pons and Mid-brain. It produced chronic drowsiness which suggests that input from sleep center in the lower pons or medulla inhibits the alertness center.

4. Homoeopathic Approach

- **ANTIMONIUM TARTARICUM**

Common name: Tartar Emetic

From leaders in homoeopathic therapeutics:

Great accumulation of mucus in the air passages, with coarse rattling with inability to expectorate; impending paralysis of lungs.

Face very pale or cyanotic from unoxidized blood.

Great coma or sleepiness in most complaints.

Vomiting, intense nausea, with prostration; general coldness, cold sweat and sleepiness.

Trembling; internal, head and hands.

Thick eruptions like pocks, often pustular; as large as a pea.

Modalities: > from expectoration.

Both ends of life, childhood and old age; clings to those around; wants to be carried; cries and whines if any one touches it; will not let you feel the pulse.

- **NUX MOSCHATA**

Common name: Nutmeg

From leaders in homoeopathic therapeutics: Stupor insensibility, unconquerable sleep; sleepy with most all complaints.

Excessive dryness of the tongue, mouth, lips and throat; no thirst.

And < cold damp weather, getting wet, or washing; after eating (bloating); > in room, dry weather.

Changeable humor; one moment laughing, the next crying.

- **GELSEMIUM**

Common name: Yellow Jasmine

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Complete relaxation and prostration ofthe whole muscular system, with almost or entire motor paralysis. Eyelids droop; muscles refuse to obey the will.

Trembling of hands or lower extremities if he attempts to move; must lie still.

Mental faculties dull, cannot think; drowsy, with dull red face.

Susceptibility to mental disturbance, excitement or emotion; causes diarrhea.

Dull, tired, prostrating headache at base of brain; wants head high, sometimes > by profuse urination.

Vertigo with blurred vision; dilated pupils; double sight; sense of intoxication.

Nervous chill, violent shaking with no sense of coldness.

Desire to be quiet; feels too weak to move.

Children: fear of falling, seize the nurse, grasp the crib, especially in

intermittent.
Slow, weak pulse of old age.
Great heaviness of the eyelids; cannot keep them open.
Fears that unless constantly on the move, the heart will cease beating.
General deep-seated muscular painwith prostration (la grippe).

II. METHODOLOGY

- **Study design-** Case series study was done on 45 cases satisfying the inclusive and exclusive criteria. Cases which were fulfilling the criteria was administered with

the medicines from "Nash trio of sleepiness (Antimonium Tartaricum, Nux Moschata, Gelsemium)", considering the peculiarities of each remedy.

- **Study duration-** 6 months with 6 follow ups at 15 days interval.
- **Study setting** – Motiwala (National) Homoeopathic Medical College [M(N)HMC] OPD, Nashik, Devram Narayan Patil Highschool and Jr. College, Nashik and Siddeshwar Clinic, Malegaon
- **Study subjects-** Individuals who are between the age group of 15 to 35 years and an ESS score of more than 5 were selected for the study of each sex. Participants who Were with grave pathological and psychological disorders and were on treatment for the same were excluded. Pregnant women were excluded from the study as well.
- **Sample size and technique-** 45 patients were included in study using Convenience sampling technique.
- **Statistical analysis-** Using Paired T test, the collected data was analyzed. The T value was 20.37 which when put into p-value calculator gave the value of less than 0.00001 hence proving the study to be statistically significant.

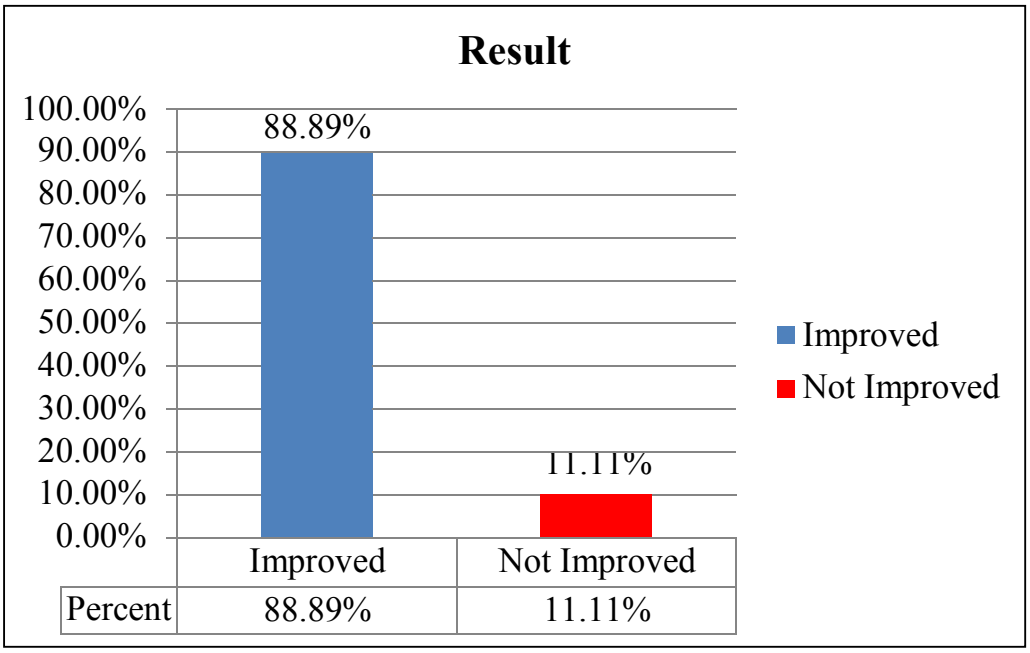
III. RESULTS

A total of 45 cases were studied in order to find the effectiveness of Nash trio of sleepiness. Following table shows the objectives and its outcome in the study.

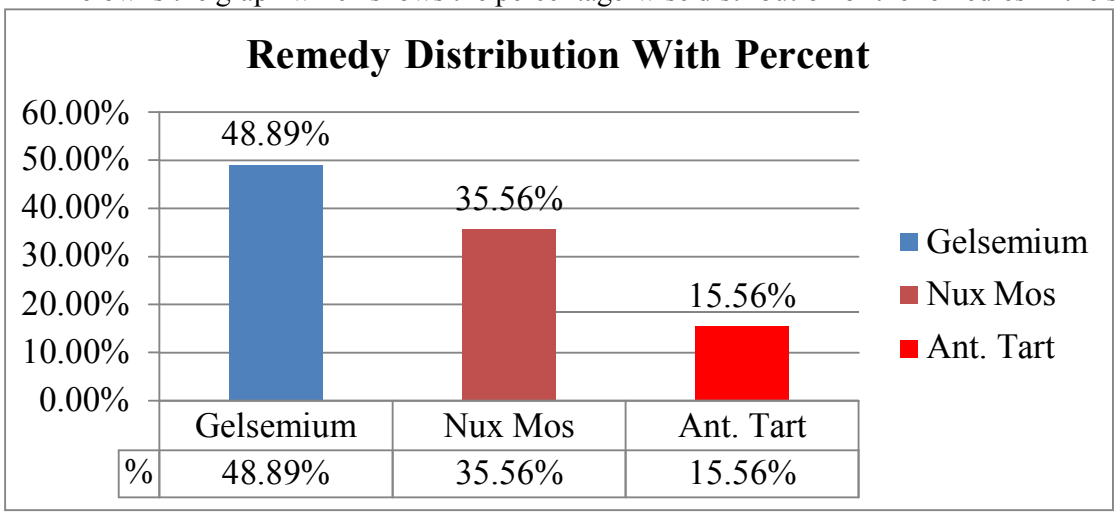
Objective	Results
1. To study efficacy of Nash trio of sleepiness in management of hypersomnia in the age group of 15 to 35 years.	The remedies of Nash trios of sleepiness have shown its effectiveness in 88.89% and has improved 40 out of 45 cases thus fulfilling the objective.
2. To identify the most commonly used homoeopathic medicine of Nash trio of sleepiness in our study.	Gelsemium with about 48.89% is the most commonly used remedy followed by Nux Moschata viz. 35.56% and lastly Antimonium Tartaricum with 15.56 %

Out of 45 cases, 27 were females and males were 18 viz. 60% and 40% respectively. The age group in our study was 15 to 35 years and most being from 15 to 20 year with about 62.22%. 20% were from 20 to 25 years. The least were from 25 to 35 years with 17.78% and none being from 30 to 35 years.

The following graphs shows the interpretation of the results.



Below is the graph which shows the percentage-wise distribution of the remedies in the study



IV. Discussion

A survey was performed to screen the cases of hypersomnia around 250 people were screened for the same out of which 45 were selected for the study purpose using the inclusion criteria which was of age group between 15 years to 35 years.

In all patients who participated in the study 18 were males and 27 were females.

The process was made paperless by creating a Google form and all the initial participants were ask to fill this form.

The Google form was made using Epworth sleepinessscale.

The Epworth sleepiness scale measure the general level of daytime sleepiness. It is the subjective scale that ask the respondent to rate his or her propensity

to doze off or fall asleep during 8 common daily activities to determine the level of daytime sleepiness.

Interpretation: Certain limitations and draw backs were found during the whole process

Score	Interpretation
0-5	Lower Normal Daytime Sleepiness
6-10	Higher Normal Daytime Sleepiness
11-12	Mild Excessive Daytime Sleepiness
13-15	Moderate Excessive Daytime Sleepiness
16-24	Severe Excessive Daytime Sleepiness

Table 2 Interpretation of ESS scores

With the help of scale 45 patients were selected for the study. After a thorough case taking of each individual the medicines were prescribed on the basis of therapeutic indications guided from leaders in homoeopathic therapeutics with grouping and classification by E.B. Nash as it known the trios of sleepiness which includes Nux Moschata, Antimonium Tartaricum, Gelsemium the medicines were given almost these three remedies. Non reportorial approach was used to prescribe the medicines

1. Nux Moschata has helped to relieve sleepiness in 15 cases and not better in 1 case out of 16 cases
2. Antimonium Tartaricum has helped to relieve sleepiness in in 5 cases and not better in 2 cases out of 9 cases.
3. Gelsemium has helped to relieve sleepiness in 20 cases and not better in 2 cases out of 22 cases.

- Communication – Since most of the participant were of age group 15 to 18, it was difficult to explain the reason behind us asking the questions and getting a true answer out of it.
- Since it was non reportorial approach selection of remedies were difficult.
- Since most of people didn't come up with hypersomnia process of case taking was difficult most questions revolved around only sleep.
- Since there is no epidemiology of hypersomnia in India, deciding the number of samples was difficult as well.

Scope of the study:

The study could be taken a step further by investigating the causes of hypersomnia which wasn't mentioned in this study. It could also act as a pilot study to find epidemiology of Hypersomnia. It can also help in investigating different components of sleep disorders and their management using homoeopathic medicines.

V. Conclusion

A total of 45 cases of hypersomnia were prescribed from Nash trios of sleepiness, which is effective in 88.89% of cases and not effective in 11.11% of cases. We had used paired t test and calculated p-value which showed the significant difference between the pre and post-test. Thus, it proves that the Nash trio of Sleepiness is effective in managing the cases of hypersomnia.

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