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# A COMPARATIVE STUDY OF EFFICACY OF JATAMANSI VATI AND ABHYANGA IN MANAGEMENT OF ANIDRA WITH SPECIAL REFERENCE TO INSOMNIA

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**ABSTRACT**

*Nidra* is essential for healthy living.Vitiated *vata* or *pitta Dosha,* mental stress,mental and physical trauma or emaciation due to improper diet and diseases are causes of *Anidra*.In *Ayurvedic* classics symptoms of *Anidra* are described like yawning, bodyache, lassitude, headache, heaviness in the head and eyes, inactivity, exhaustion, giddiness, indigestion and diseases caused by *vata. Anidra* can be correlated with insomnia due to similarity of symptoms.Incidence of *Anidra* is on increase due to stressful lifestyle.About30% of the general population have complain of insomnia.In *Ayurveda* different *Acharyas* have advocate *bahya* and *abhyantar chikitsa* for treating *Anidra*.The present study was undertaken to evaluate efficacy of *Jatamansi vati* and *Abhyanga (shirobhyanga and padabhyanga)* with *Brahmi taila* in management of *Anidra*.Total 30 patients were randomly selected and divided in two equal groups. Group A patients were given *Jatamansi vati* 500mg twice a day with milk and Group B patients were given *Abhyanga (Shirobhyanga and Padabhyanga)* with *Brahmi taila* for 15 days. Statistical analysis revealed that both Groups showed good improvement in various parameters of *Anidra*. Hence it can be concluded that *Jatamansi* and *abhyanga (Shirobhyanga* and *Padabhyanga*) with *Brahmi taila* are individually equally useful to treat *Anidra* and that too without any unwanted effects.

**Key words**-*Anidra*,insomnia,*Jatamansi*,*Abhyanga*,*Brahmi taila*

## INTRODUCTION

*Nidra* is considered as one of the *Trividha upastambhas (ahar,nidra and bramhacharya*) for maintainance of normal health. According to *Acharya Charak,AcharyaSushruta,Bhavprakash* adequate sleep is essential for maintaining good physical and mental health and overall wellbeing of an individual[1,2,3].*Anidra* is mainly caused by vitiation of *vata, pitta dosha*, mental stress, emaciation or physical or mental trauma.According to *Acharya Charaka Anidra* is one of the 80 *nanatmaja vyadhi* of *vata*.[4]*Anidra* leads to various problems like unpleasantness, emaciation, weakness, impotency, ignorance and finally culminating into death. Insomnia is the complaint of inadequate quality and quantity of sleep[5].*Anidra* can be correlated with insomnia due to its similarity in symptoms.Insomnia is a common sleep disorder that affects 30% of the general population.[6]

Insomnia may be a symptom of stressful lifestyle, depressive illness, anxiety disor-

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ders and any psychiatric conditions. Irrespective of the cause of insomnia, immediate attention in lifestyle change is helpful to correct it. Insomnia reduces mental capacity and efficacy of an individual, increases the incidences of different types of accidents and may lead to severe psychosomatic disorders.It increases risk of hypertension, diabetes, obesity, depression, heart attack and stroke [7].

In *Ayurveda* many herbal drugs are mentioned which overcome the sleep related disorders. One of them is *Jatamansi (Nardostachys jatamansi* Dc.).It has *nidrakar,medhya,bhutaghna* and *vatapitta shamaka* action.[8] The research works done on *Jatamansi* claims it to have CNS depressant action (sedation) and blood pressure lowering effect.[9]According to *Charak samhita Abhyangas* are helpful to promote *nidra*[10].And hence *Shirobhyanga* (head massage) and *Padabhyanga* (foot massage) with *Brahmi taila* have been selected for the present study.*Brahmi taila* (*Bacopa monnieri*) is used for *Abhyanga* because of its sedative and *medhya* properties.[11,12]

**Need of study** –.

In Modern medicine sedative and tranquilizer drugs are used to induce sleep in insomnia but it cannot be used for a long time as it leads to dependence [13]. In such a scenario there is need for the efficient management of insomnia in a natural way.*Ayurveda* treats *Anidra* by both *abhyantar and bahya chikitsa*. Hence the study selected.

## Aims and Objectives

**Aim-** Assessment of efficacy of *Jatamansi vati* and *Brahmi taila abhyanga* in insomnia.

**Objectives**–

- To evaluate effects of *Jatamansi vati* in various parameters of *Anidra*.
- To evaluate effects of *Abhyanga* (*Shirobhyaga* and *Padabhyanga)* in various parameters of *Anidra*
- To compare the efficacy of effects of *Jatamansi vati* and *Abhyanga* (*Shirobhyaga* and *Padabhyanga)*

**Material and Method:** The study was carried out after obtaining the ethical clearance of Institutional Ethics Committee and prior consent was taken from the patient for undertaking the study.

**Type of study**- An interventional comparative clinical study.

**Source of data**-Patients fulfilling the diagnostic criteria of *Anidra* (primary insomnia) were randomly selected and registered from the OPD and IPD of *Kayachikitsa* department of Mahatma Gandhi *Ayurved* college, Hospital & Research centre, Salod(H),Wardha and peripheral camps.

**Sample size**-30 patients

They were randomly divided in two equal groups.One group was given *Jatamansi vati* orally and another group was treated with *Abhyanga* (*Shirobhyanga and Padabhyaga)* with *Brahmi taila*.

**Inclusion Criteria**

- Individuals between the age group of 20 to 70 years of either sex of insomnia of minimum one month duration
- Patients of insomnia with mild hypertension and anxiety disorders.

**Exclusion Criteria**

- Patients having major psychiatric illness like schizophrenia, depressive psychosis,epilepsy.
- Chronic alcoholics
- Patients having asthma, malignancies, liver cirrhosis, chronic renal failure.
- Patients having Cardio Vascular Accident, Congestive Cardiac Failure, Chronic Obstructive Pulmonary Disor-

ders, meningitis, acute painful conditions.

**Drug source-**

- *Jatamansi vati*-ingredients-*Jatamansi* rhizomes
- *Brahmi taila*- ingredients-*Brahmi* and base oil-sesame oil
- *Jatamansi vati* and *Brahmi taila* were prepared in Dattatreya *Rasashala* attached to MGAC,H&RC,Salod,Wardha.

**Toxicological study of *Jatamansi*-** 5000mg/kg oral intake in rats of the water extract has failed to show any signs of clinical toxicity whereas 28 days ingestion of 1000mg/kg also failed [14]

**Posology-**

- Group A-*Jatamansi vati* – 5oo mg twice a day ( at 8 am and 8 pm) with milk
- Group B-*Shirobhyanga*(Head massage ) and *Padabhyanga*(foot massage) with *Brahmi taila* one hour before going to bed for 15mins.

**Procedures-** The near relatives of the patients were trained to give *Shirobhyanga and Padabhyanga* under specialised supervision

***Shirobgyanga***- Patient was asked to sit in chair. Lukewarm *Brahmi taila* (approximately 40°C) was applied on the head and neck by hands.Massage was done gently with tips of fingers (using different strokes) in the direction of hair (*anuloma gati)* for 15 minutes.[15]

***Padabhyanga***-Feet were washed thoroughly with soap and water and wiped clean.Patient was asked to sit in comfortable position. *Brahmi taila* was applied on the foot.Base of each toe was rubbed gently and slight pressure was applied between the toes.Then *Brahmi taila* was applied on sole and dorsum of the foot.Then it was applied on heel and around the ankle joint in circular motions with both hands in a clockwise and anticlockwise direction.The massage was done by sweeping, rubbing, stroking and kneading with circular motion.Lastly *Brahmi taila* was applied on calf muscles in vertical direction (from above downwards). same procedure was repeated on the other foot.Massage was done for 15 minutes on each foot.[16,17]

**Duration**- 15 days

**Follow up during treatment** - On7$^{th}$ and 15$^{th}$ day

**Follow up after treatment** –After 30 days

**Investigations-**

♦ Blood - Hb%, TLC, DLC, ESR, RBS

♦ Urine - Routine and Microscopic examination

**Diagnostic criteria-**

- Reduction in total hours of sleep
- Difficulty in initiating sleep
- Frequent awakening during night
- *Angamarda*(Bodyache)
- *Tandra*(Drowsiness),
- *Shirshool*(headache)
- *Ajirna*(indigestion)
- *Malbaddhata*(constipation)

**Assessment criteria-**

1. Total hours of sleep
2. Difficulty in initiating sleep
3. Number of awakenings
4. *Angamarda*(Bodyache)
5. *Tandra*(Drowsiness)
6. *Shirshool*(headache)
7. *Ajirna*(indigestion)
8. *Malbaddhata*(constipation)A special proforma was prepared with a gradation of symptoms and scoring was done by adopting Athens Insomnia Scale. [18]

**Table no.1: Total hours of sleep-**

| | |
|---|---|
| **Grade 0** | **6 hrs. to 8hrs.(Normal)** |
| **Grade 1** | 4hrs. to less than 6 hrs. |
| **Grade 2** | 2 hrs. to less than 4 hrs. |
| **Grade 3** | 0 to less than 2 hrs. |

**Table no.2: Difficulty in initiating sleep-**

| | |
|---|---|
| **Grade 0** | **sleep within 30min.(Normal)** |
| **Grade 1** | 30mins. to less than 1hr. |
| **Grade 2** | 1hr to less than 2hrs. |
| **Grade 3** | 2hrs. or more |

**Table no.3; Number of awakenings-**

| | |
|---|---|
| **Grade 0** | **No awakening,normal** |
| **Grade 1** | 1 to 2 times |
| **Grade 2** | 3 to 4 times |
| **Grade 3** | more than 4 times |

**Table no.4: *Angamarda* (Bodyache)-**

| | |
|---|---|
| **Grade 0** | **No bodyache** |
| **Grade 1** | (Mild)generalized pain on & off during the day |
| **Grade 2** | (Moderate) generalized pain throughout the day but is able to normal activity |
| **Grade 3** | (Severe) generalized pain throughout the day enough to affect routine work. |

**Table no.5: *Tandra* (Drowsiness) -**

| | |
|---|---|
| **Grade 0** | **No *tandra*** |
| **Grade 1** | Occassional for short duration |
| **Grade 2** | Intermittent *tandra* for long duration |
| **Grade 3** | Frequent *tandra* throughout the day |

**Table no.6: *Shirshool* (Headache)-**

| | |
|---|---|
| **Grade 0** | **No *shirshool*** |
| **Grade 1** | Occassional |
| **Grade 2** | Intermittent, not affect daily routine |
| **Grade 3** | Frequent, affecting daily routine work |

**7. *Ajirna* (indigestion)-Yes/No**

**8. *Malbaddhata* (constipation) –Yes/No**

**Table no.7: Overall improvement of patient was assessed as per following gradation**

| Grade | Improvement in percentage(%) |
|---|---|
| **0 grade indicates** | 100% Improvement |
| **1 grade indicates** | 75% Improvement |
| **2 grade indicates** | 50 % Improvement |
| **3 grade indicates** | 25 %Improvement |

**Statistical Analysis-**Statistical Analysis was done by using descriptive and inferential Statistics using Chisquare test and softwareused in the analysis were SPSS 17.0 version, EPI 7.0 version and GraphPad Prism 5.0 version and $p<0.05$ is considered as level of significance.

**OBSERVATIONS AND RESULTS-**

The study (n= 30) revealed that majority of the patients (73.33%) belonged to the age between 41 to 70 years and Male

(63.33%).Maximum patients had *vata-pittaja prakriti* (53.33%). Majority patients were from middle socioeconomic class (63.33%).Maximum patients had constipation and irregular bowel habit (60%) indicating *vata* dominancy.In group A,2 patients (13.3%)showed 100% improvement and 13 patients(86.7%) showed 75% improvement in total sleep time while in group B 4 patients (26.7%)showed 100% improvement and 11 patients(73.3%) showed 75% improvement after treatment in total sleep time.Thus total sleep time in group A was increased after treatment and found to be significant(p=0.0005) with x2 value (17.76) However in group B slightly better improvement in total sleep time was observed than group A with significant (p=0.0001) and x2 value (23.23).But comparison of both group was statistically not significant(p=0.36 and x2=0.86). In group A,8 patients (53.3%)showed 100% improvement and 7 patients(46.7%) showed 75% improvement while in group B 5 patients (33.3%) showed 100% improvement and 10 patients(66.7%) showed 75% improvement in sleep induction time after treatment.Thus after treatment sleep induction time in group A was reduced and found to be significant(p=0.0001) with x2 value (26.50). However group B was slightly better improvement than group A with significant (p=0.0001) and x2 value (31.17).But comparison of both group was statistically not significant (p=0.08 and x2=2.94). In group A,7 patients (46.7%)showed 100% improvement and 8 patients(53.3%) showed 75% improvement in number of awakening while in group B 7 patients (46.7%)showed 100% improvement and 8 patients(53.3%) showed 75% improvement in number of awakening after treatment.Thus number of awakening in group A was reduced and found to be significant(p=0.0005) after treatment with x2 value (17.76) similarly group B was also significant p value (p=0.0001) and x2 value (23.23). Comparison of both group was statistically not significant(p=0.70 and x2=0.69). In group A, 7 patients(46.7%) showed 100% improvement and 7 patients(46.7%) showed 75% improvement & 1 patient(6.7%) showed 50% improvement in *angamarda* while in group B 5 patients (33.3%)showed 100% improvement and 10 patients(66.7%) showed 75% improvement in *angamarda* after treatment.Thus *angamarda* in group A was decreased and found to be significant(p=0.0002) with x2 value (20.22) after treatment. However group B was slightly better than group A with significant(p=0.0005) and x2 value (17.62).But comparison of both group was statistically not significant(p=0.39 & x2=1.86). In group A,13 patients (86.7%) showed 100% improvement and 2 patients(13.3%) showed 75% improvement in *tandra* while in group B 5 patients (33.3%) showed 100% improvement and 10 patients(66.7%) showed 75% improvement in *tandra* after treatment.Group A showed significant(p=0.0002 and x2 value (18.89) ) after treatment. However group B showed better improvement than group A with significant(p=0.0001) and x2 value (23.03).Thus group B showed more improvement than group A with statistically significant(p=0.02 and x2=8.89) values.In group A,10 patients (66.7%)showed 100% improvement and 5 patients(33.3%) showed 75% improvement in *shirshool* while in group B 9 patients (60%)showed 100% improvement and 6 patients (40%) showed 75% improvement in *shirshool* after treatment. Group A found to be significant (p=0.0012) and x2 value (15.83)

However in group B slightly better improvement was observed than group A with significant(p=0.0008) and x2 value (16.80).But comparison of both group was statistically not significant(p=0.70 and x2=0.14). Before treatment in group A *Ajirna* was present in 10 patients (66.67%) which was reduced to 20% after treatment that is present only in 3 patients with significant p and x2 value 0.009 and 6.65 respectively while in group B before treatment *Ajirna* was present in 11 patients(73.33%)which was reduced to 20% after treatment that is present in 3 patients with significant p and x2 value 0.003 and 8.57. But comparison of both groups showed non-significant value of p (0.69) and x2 value (0.15). Before treatment in group A *malbaddhata* was present in 9 patients(60%) which was reduced to 13.33% that is present only in 2 patients with significant p and x2 value 0.008 and 7.03 respectively while in group B *malbaddhata* was present in 11 patients(73.33%) before treatment which was reduced to 46.67% after treatment that is present in 7 patients with non-significant p and x2 value 0.13 & 2.22 respectively.This showed that group A was statistically significant than group B (p=0.04 and x2 =3.96).

## DISCUSSION

This study revealed that incidence of *Anidra* increases with age,which denotes prevalence of insomnia rises as the age advances.It may be due to *vata* dominance in advanced age.In this study number of male patients were more as compared to female which suggest its prevalence in male,may be due to more stress at workplace.It is observed that patients having *vatapittaja prakriti* are more prone to *Anidra* as *vata and pitta* vitiation is one of the causative factors of *Anidra*.In this study more number of patients were from urban area and from middle socioeconomic class which indicate adverse effect of environmental factors and stress on health.These findings are comparable to the research study of Anil et.al.[19]

Both groups showed significant improvement in all parameters except in group B where *malabaddhata* showed non-significant value of p and x2.In *Tandra* group B showed statistically significant improvement than group A.Rest of the parameters showed significant values of p and x2 in both groups. Group B showed better improvement than group A.

**Probable mode of action of *jatamansi*-** *Jatamansi* has *tikta*(bitter),*kashaya*(astringent) and *madhura*(sweet) *rasa*, *snigdha guna, sheeta virya*.It is *vatapitta shamaka*.It alleviate *vata* and *pitta*.It helps to calm the mind by relieving anxiety and induces sleep due to its *nidrakar* property.Milk taken as *anupana* causes *kapha vruddhi* and thereby *tamoguna vruddhi* thus enhancing the *nidrakar* effect of *Jatamansi*.*Jatamansi* acts by its *bhutaghna(manasdoshahar) prabhava* Many studies revealed that *Jatamansi* is sedative,antianxiety due to its CNS depressant action.[20to21]

**Probable mode of action of *Abhyanga*-** *Abhyanga* alleviates *vata dosha* and increases *kapha dosha*.Increased *kaphadosha* enhances the *tamo guna* which counteract the *rajo dosh*.Thus helps in inducing sleep.*Abhyanga* reduces stress, anxiety,fatigue and induces sound sleep during night.The benefits of the massage may be enhanced by the choice of the massage oil hence *Brahmi taila* is used.[22,23]*Brahmi taila* is sedative, anxiolytic properties .Thus helpful to relieve tension and fatigue.It gives general relaxation and induces sleep. [24,25].There has

been some evidence that massage lowers levels of cortisol - the "stress" hormone that raises alertness.Massage also increases levels of the neurotransmitters serotonin and dopamine, which calms the mind. Dopamine is also a precursor of harmone melatonin that regulates sleep-wake cycle.[26,27]. According to the Mayo Clinic, studies have found massage to be beneficial for insomnia-related stress as well as anxiety.The National Institutes of Health has advised that massage therapy can reduce fatigue and improve sleep and based on research gathered by the American Massage Therapy Association, massage has been shown to improve sleep in all irrespective of the age.It has similar types of effects in individuals with psychiatric disorders as well.[28]

## CONCLUSION

From the above study it can be concluded that the *Jatamansi* as internal drug therapy and *Abhyanga* as a external therapy (*Shirobhyanga* and *Padabhyanga*) with *Brahmi taila* are individually and equally effective in the treatment of *Anidra* ( insomnia) without any side effects. This study was conducted on small sample size and short duration.For a further Study a bigger sample size and longer duration is recommended.

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**Table no 8: Comparison of Total sleep time in two groups**

| Total sleep time | Group A | | Group B | | ⨯2-value |
|---|---|---|---|---|---|
| | BT | AT | BT | AT | |
| **6-8hrs (Normal)** | 0(0%) | 2(13.3%) | 0(0%) | 4(26.7%) | 0.86, p=0.36,NS |
| **4 - < 6hrs** | 4(26.7%) | 13(86.7%) | 2(13.3%) | 11(73.3%) | |
| **2- < 4 hrs** | 8(53.3%) | 0(0%) | 11(73.3%) | 0(0%) | |
| **<2 hrs** | 3(20%) | 0(0%) | 2(13.3%) | 0(0%) | |
| | | | | | |
| **⨯2-value** | 17.76 | | 23.23 | | |

| | | | |
|---|---|---|---|
| **p-value** | 0.0005,S | 0.0001,S | |

S-Significant at 5% level of significance,p<0.05

NS-Not Significant at 5% level of significance,p>0.05

**Table no.9: Comparison of sleep induction time in two groups**

| **Sleep induction** | **Group A** | | **Group B** | | **ϰ2-value** |
|---|---|---|---|---|---|
| | BT | AT | BT | AT | |
| **Normal, < 30 min** | 0(0%) | 8(53.3%) | 0(0%) | 5(33.3%) | 2.94, p=0.08,NS |
| **30 min-<1 hr** | 1(6.7%) | 7(46.7%) | 1(6.7%) | 15(66.7%) | |
| **1 hr-< 2 hrs** | 14(93.3%) | 0(0%) | 14(93.3%) | 0(0%) | |
| **2-< 3 hrs** | 0(0%) | 0(0%) | 0(0%) | 0(0%) | |
| **ϰ2-value** | 26.50 | | 31.17 | | |
| **p-value** | 0.0001,S | | 0.0001,S | | |

**Table no.10: Comparison of number of awakening in two groups**

| **No of awakening** | **Group A** | | **Group B** | | **ϰ2-value** |
|---|---|---|---|---|---|
| | BT | AT | BT | AT | |
| **No Awakening** | 1(6.7%) | 7(46.7%) | 2(13.3%) | 7(46.7%) | 0.69, p=0.70,NS |
| **Once** | 8(53.3%) | 8(53.3%) | 6(40%) | 8(53.3%) | |
| **Twice** | 6(40%) | 0(0%) | 7(46.7%) | 0(0%) | |
| **ϰ2-value** | 10.50 | | 10.06 | | |
| **p-value** | 0.005,S | | 0.006,S | | |

**Table no. 11: Comparison of *Angamarda* in two groups**

| ***Angamarda*** | **Group A** | | **Group B** | | **ϰ2-value** |
|---|---|---|---|---|---|
| | BT | AT | BT | AT | |
| **No Body ache** | 0(0%) | 7(46.7%) | 2(13.3%) | 5(33.3%) | 1.86 p=0.39,NS |
| **Mild** | 2(13.3%) | 7(46.7%) | 2(13.3%) | 10(66.7%) | |
| **Moderate** | 8(53.3%) | 1(6.7%) | 8(53.3%) | 0(0%) | |
| **Severe** | 5(33.3%) | 0(0%) | 3(20%) | 0(0%) | |
| **ϰ2-value** | 20.22 | | 17.62 | | |
| **p-value** | 0.0002,S | | 0.0005,S | | |

**Table no.12: Comparison of *Tandra* in two groups**

| ***Tandra*** | **Group A** | | **Group B** | | **$ϰ^2$-value** |
|---|---|---|---|---|---|
| | BT | AT | BT | AT | |
| **No *Tandra*** | 1(6.7%) | 13(86.7%) | 1(6.7%) | 5(33.3%) | 8.89 p=0.02,S |
| **Occasional for short duration** | 8(53.3%) | 2(13.3%) | 1(6.7%) | 10(66.7%) | |
| **Intermittent tandra for long duration** | 4(26.7%) | 0(0%) | 11(73.3%) | 0(0%) | |
| **Frequent *tandra* throughout** | 2(13.3%) | 0(0%) | 2(13.3%) | 0(0%) | |

| | | | | | |
|---|---|---|---|---|---|
| **the day** | | | | | |
| **$\chi^2$-value** | 19.89 | | 23.03 | | |
| **p-value** | 0.0002,S | | 0.0001,S | | |

**Table no.13: Comparison of *Shirshool* in two groups**

| ***Shirshool*** | **Group A** | | **Group B** | | **χ2-value** |
|---|---|---|---|---|---|
| | BT | AT | BT | AT | |
| **No *Shirshool*** | 2(13.3%) | 10(66.7%) | 1(6.7%) | 9(60%) | 0.14 p=0.70,NS |
| **Occasional once in 24 hrs** | 3(20%) | 5(33.3%) | 4(26.7%) | 6(40%) | |
| **Intermittent no affect daily routine** | 7(46.7%) | 0(0%) | 6(40%) | 0(0%) | |
| **Frequent affecting daily routine week** | 3(20%) | 0(0%) | 4(26.7%) | 0(0%) | |
| **χ2-value** | 15.83 | | 16.80 | | |
| **p-value** | 0.0012,S | | 0.0008,S | | |

**Table no.14: Comparison of *Ajirna* in two groups**

| ***Ajirna*** | **Group A** | | **Group B** | | **χ2-value** |
|---|---|---|---|---|---|
| | BT | AT | BT | AT | |
| **Yes** | 10(66.67%) | 3(20%) | 11(73.33%) | 3(20%) | 0.15 p=0.69,NS |
| **χ2-value** | 6.65 | | 8.57 | | |
| **p-value** | 0.009,S | | 0.003,S | | |

**Table no.15: Comparison *of Malabaddhata* in two groups**

| ***Malabaddhata*** | **Group A** | | **Group B** | | **$\chi^2$-value** |
|---|---|---|---|---|---|
| | BT | AT | BT | AT | |
| **Yes** | 9(60%) | 2(13.33%) | 11(73.33%) | 7(46.67%) | 3.96 p=0.04,S |
| **χ2-value** | 7.03 | | 2.22 | | |
| **p-value** | 0.008,S | | 0.13,NS | | |

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