Original Article



Comparison the impact of Barij Laxy Herb syrup and Magnesium Hydroxide on constipation of pregnant women

Saeed Khodadad¹, Anayatolah Saalimi¹, Mojgan Baraty², Razieh Mohamadjafari²*

¹Department of Pharmaceutics, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran. ²Department of Obstetrics and Gynecology, Fertility Infertility and Perinatology Research Center, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran.

Correspondence: Razieh Mohamadjafari, Department of Obstetrics and Gynecology, Fertility Infertility and Perinatology Research Center, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran. E-Mail: Rmj417072@gmail.com

ABSTRACT

The present study was undertaken to compare the impact of laxy Herb Syrup and magnesium hydroxide on constipation among pregnant women. The present study was conducted in 2022, involving a sample of 60 pregnant women who were experiencing constipation. The participants were distributed into two groups: one receiving laxy Herb syrup and the other receiving magnesium hydroxide syrup. The patients had a one-week treatment period. The study involved the collection of data regarding many parameters, including the frequency of defecation each week, the consistency of stool, the frequency of abdominal pain, painful defecation, and any observed side effects associated with constipation. These measurements were taken both before and after the commencement of the study. The data analysis was conducted utilizing descriptive statistics with a 95% confidence level, employing the R statistical programming language.

The findings of the study indicated that the consumption of magnesium had a significant effect on reducing abdominal pain, anal pain, headache, nausea, and vomiting among pregnant women (p<0.05). Barij Laxy Herb syrup did not demonstrate a statistically significant impact on alleviating headache symptoms, as well as reducing the incidence of nausea and vomiting. Additionally, the findings of this study indicated that the group administered magnesium medication had a higher frequency of normal consistency of stool compared to the group treated with Laxy Herb. It is concluded that the efficacy and performance of the magnesium hydroxide drug surpass those of the Barij Laxy Herb medicine.

Keywords: Pregnant women, Magnesium hydroxide, Constipation, Barij Laxy Herb

Introduction

Gastrointestinal issues frequently occur during pregnancy. In the realm of pregnancy-related digestive complaints, constipation holds the second position in terms of prevalence, trailing only behind nausea. A significant proportion of women, approximately 40%, experience constipation during various stages of pregnancy. The majority of women typically seek medical care from a primary care physician or gynecologist, with only exceptional instances being referred to a gastroenterologist. Constipation is a prevalent medical issue that affects a significant portion of the general population, with a reported prevalence of up to 30% (1).

The Rome criteria represent a widely accepted clinical tool utilized for the assessment of chronic constipation; however, it is important to note that these criteria were not originally developed with the specific consideration of constipation associated with pregnancy. Patients commonly present with symptoms about the frequency and difficulty of defecation, which may not align with stringent diagnostic criteria. Patients may exhibit symptoms such as the act of exerting excessive effort during bowel movements, the presence of stools that are extremely ha, the experience of unproductive desires to defecate, and a sensation of incomplete evacuation. Consequently, the patient may present with symptoms of constipation despite regular bowel movements. A concise set of diagnostic criteria for constipation encompasses the few bowel movements (less than three per week), hardened stools, and the experience of difficulties during defecation. These criteria are more convenient for implementation in ordinary clinical practice and serve as reliable indicators for identifying constipation in pregnant women (2).

According to the findings of Anderson *et al*, a study conducted on pregnant women, it was observed that 38% and 20% of the

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-Non Commercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms. participants suffered constipation during the second and third trimesters of pregnancy, respectively (1). According to a recent study conducted by Marshall *et al*, it has been observed that approximately 35% of women experience constipation during their pregnancy. The findings of this study conducted in Ireland, which involved a sample size of over 7000 patients, revealed that a higher percentage of women experienced constipation during pregnancy in their first delivery (35%) compared to those who had already given birth at least once before (39-42%) (3).

There appear to be multiple factors contributing to constipation during pregnancy. Numerous pregnant women may experience constipation in the absence of pregnancy and see an exacerbation of their symptoms during pregnancy. Constipation may manifest as a novel occurrence in patients throughout the gestational period. The heightened occurrence of constipation can be attributed to a confluence of factors, including hormonal influences on the gastrointestinal system, the mechanical impact of fetal growth and placental development, and alterations in dietary patterns and levels of physical activity (4).

During pregnancy, individuals without a prior history of intestinal issues may encounter constipation for the first time. Moreover, pregnant women who already have constipation may also be affected and during the gestational period, it is frequently seen that individuals have an exacerbation of their symptoms. There exists empirical evidence suggesting that the act of exerting excessive pressure during defectation may potentially result in detrimental effects on the pudendal nerve and the proper functioning of the pelvic floor muscles. (5) Constipation is a significant contributing factor in the development of uterine and vaginal prolapse (6).

The majority of cases include uncomplicated constipation, which arises from a confluence of hormonal and mechanical variables that disrupt the regular operation of the gastrointestinal tract. Nevertheless, certain women experience constipation before conception, and their symptoms exacerbate throughout uncomplicated Individuals suffering pregnancy. from constipation typically respond well to interventions involving education, support, and guidance. It is advisable to refrain from the use of medicine, but, in cases where their usage becomes imperative, it is recommended that they be administered under appropriate supervision and by the most reliable and up-to-date evidence. Conducting a comprehensive assessment of patients, including a thorough review of their medical history, physical condition, and early diagnostic tests, is crucial to exclude the possibility of gastrointestinal pathology, which may be observed in a minority of instances. Individuals who exhibit symptoms before pregnancy should undergo a comprehensive evaluation during the postpartum period (2).

Pharmacological treatment for constipation during pregnancy is often limited to those experiencing persistent and difficult-tomanage symptoms. The primary objective of treatment is to deliver a secure and efficacious alleviation of symptoms. In the context of pregnant women, it is imperative to employ a laxative that demonstrates efficacy and safety, while also ensuring that it does not permeate into breast milk and is well-tolerated (2). Similar to other medications during pregnancy, the use of laxatives should be approached with prudence. There is an established correlation between the use of anthraquinone laxatives, including dantron, and the occurrence of congenital abnormalities (7). Saline osmotic laxatives, such as magnesium citrate and sodium phosphate, have the potential to induce maternal salt retention, whereas castor oil has been seen to elicit premature uterine contractions. In a theoretical context, it is postulated that mineral oils have the potential to impact the absorption of fat-soluble vitamins within maternal physiology. Vitamin K has been associated with the development of hypothrombinemia and subsequent bleeding (2). Certain laxatives have the potential to induce diarrhea in infants. Laxatives with stimulating properties, such as Senna, are excreted in breast milk (8). Typically, the utilization of stimulant laxatives for a brief duration during pregnancy is regarded as a safe practice. Nevertheless, similar to the general population, it is advisable to refrain from prolonged utilization. Tegaserod has the properties of an HT45 agonist and shows promising promise as a therapeutic intervention for those diagnosed with constipation-predominant irritable bowel syndrome. According to a study conducted by the American Gastroenterology Association (AGA), Tegaserod was initially deemed to pose a minimal risk during pregnancy (9).

The therapeutic approach for managing chronic constipation encompasses various components, such as patient education, behavior modification, dietary adjustments, and the utilization of laxative therapy. The primary approach to addressing constipation from the outset should involve implementing modifications to one's lifestyle, which may encompass augmenting fluid intake and incorporating a diet that is abundant in fiber, particularly from vegetables such as asparagus, broccoli, Brussels sprouts, kale, and spinach. When lifestyle modifications fail to effectively manage constipation, it is advisable to explore the use of laxatives as a therapeutic option (10).

In 2021, a study conducted by Paonam examined the impact of laxative usage on the alleviation of constipation symptoms during pregnancy. The findings indicate that, according to the constipation scores of the experimental cohort, 60% of participants exhibited severe constipation during the pre-test, while 40% experienced moderate constipation. Notably, none of the respondents reported mild constipation. In the post-test, it was observed that all respondents (100%) had symptoms of moderate constipation, whereas none of the respondents displayed symptoms of severe or mild constipation. The incidence of constipation exhibited a reduction after the administration of a fruit-based laxative (11).

Barij Laxy Herb syrup has been formulated based on contemporary investigations and research, incorporating remedies documented in traditional medicine literature. This preparation has demonstrated significant efficacy in alleviating symptoms associated with constipation. The syrup formulation incorporates plum (Prunus domestica), a botanical highly regarded in Iranian medicine for its efficacy in treating constipation. Plum is recognized as a natural, optimal, and secure approach to managing this condition. The safety of this composition in pregnant women has been validated by Mahboubi's article. The production of Barij Laxy Herb Syrup is presently undertaken by Barij Essence Company, by the authorization granted by the Food and Drug Organization and it is prescribed for women (12). Saccharum officinarum, often known as red sugar, is an additional component employed in the formulation of Barij Laxy Herb syrup. This ingredient possesses the property of osmosis, drawing water into the intestines akin to a laxative with a high sugar content. Consequently, it aids in the softening of stool and serves as a preventive measure against constipation. Red sugar is regarded as a significant dietary component due to its substantial content of phenolic compounds, antioxidants, mineral salts, and vitamins (13). Igwe et al. provided a comprehensive elucidation of the laxative effects and utilization in their systematic review article. (14)

Moreover, magnesium hydroxide is frequently employed as an antacid and, when administered in higher quantities, serves as a temporary remedy for constipation. The recommended oral dosage for this laxative is 30-60 ml per day when administered with liquids. In larger doses, it has been observed to induce diarrhea. This medication induces osmotic pressure by the presence of non-absorbable ions, leading to the absorption of water into the intestines. Additionally, it stimulates the release of intestinal cholecystokinin by magnesium, resulting in increased bowel movements and improved stool excretion (15-16). The prolonged administration of this medication may result in electrolyte imbalances, potentially leading to various symptoms including dizziness, vertigo, arrhythmia, alterations in mood, weariness, weakness, and hypermagnesemia. The administration of this medication is not recommended for those with kidney failure. Additionally, it is categorized as a Group B drug in terms of its suitability for usage during pregnancy and breastfeeding (17). The safety and efficacy of magnesium hydroxide syrup in pregnant women have been substantiated in "Williams Obstetrics" book (18) Trottier et al. (19) have corroborated the utilization of magnesium hydroxide for alleviating constipation in pregnant women.

Limited research has been conducted regarding the utilization of laxatives and their efficacy in alleviating constipation. Given the significance of appropriately addressing constipation in pregnant individuals, the objective of this study is to examine and compare the therapeutic impact of magnesium hydroxide and Laxy Herb syrup in ameliorating constipation among this population.

Materials and Methods

The statistical population of this study included pregnant women experiencing constipation. These women sought assistance at the educational clinic of Jondi Shapour University of Ahvaz and fell within the reproductive age range of 15-44 years. It is important to note that these women did not have any concurrent illnesses. The sample size for the study was determined based on previous research, with a total of 60 participants included. The exclusion criteria were as follows:

• Constipation treatment within two weeks before trial enrollment

- Metabolic disorder
- A historical overview of intestinal and stomach surgery

The participants were allocated into two groups: one receiving Laxy Herb syrup (n=30) and the other receiving magnesium hydroxide (n=30). In both groups, the administered dosage consisted of 10 cc of the respective syrup following each meal. The duration of patient therapy was extended for one week. This study examined the frequency of defecation per week, stool consistency (specifically the excretion of entire pieces and one piece without pressure and pain, as classified by the Bristol stool chart types 3 and 4), the occurrence of abdominal pain and painful defecation, as well as the potential side effects of constipation, including nausea, vomiting, and headache. The questionnaire was administered both before and after the commencement of the investigation. The factors, potential adverse effects of the investigated medications, and treatment success rates were assessed and compared between the two groups before and following the study. In the present study, descriptive analysis was conducted using frequency (percentage) for qualitative variables, and mean (standard deviation) for continuous quantitative variables. To assess the difference in means for a continuous quantitative variable, the independent ttest was employed when the assumption of normality was met. Conversely, when the assumption of normality was not satisfied, the Mann-Whitney test was utilized. To assess the difference in means of a continuous quantitative variable between two related groups, the paired t-test was employed when the observations followed a normal distribution. Alternatively, if the normality assumption was violated, Wilcoxon's test was utilized. To assess the relationship between the intervention and the qualitative variables in this study, the chi-square test of independence was employed. In cases where a structural zero was present, Fisher's exact test was utilized. The ANCOVA test was employed to mitigate the influence of confounding variables. The analyses were conducted using the R statistical programming language, with a significance level of 0.05.

Results and Discussion

Table 1 examines the frequency and percentage of demographic variables.

| Table 1. Fre Charact | quency Distribution eristics among Pregn | of Demographic ant Women |
|-------------------------|---|-----------------------------|
| Variable | Frequency | Percentage |
| | Gravity | |
| 1-4 | 54 | 90.0 |
| 5-7 | 6 | 10.0 |
| | Priority | |
| 0-2 | 53 | 88.3 |
| >2 | 7 | 11.7 |
| | Number of childrer | 1 |

Anayatolah Saalimi *et al.*: A Comparative Analysis of the Impact of Barij Laxy Herb Syrup and Magnesium Hydroxide on Constipation among Pregnant Women

| 0-2 | 54 | 90.0 |
|-----|-----------------------|---------|
| >2 | 6 | 10.0 |
| Со | nstipation before med | ication |
| Yes | 22 | 36.7 |
| No | 38 | 63.3 |
| | | |

÷

It is evident that a majority of individuals exhibited gravity scores ranging from 1 to 4 and priority scores ranging from 0 to 2. Additionally, the majority of moms had less than two children. Furthermore, it is noteworthy that 22 out of the total 60 individuals experienced constipation from beginning. (36.7%)

| Table 2. Frequency Distribution of Age in Two Drug Groups | | | | | | |
|--|---------------|-------|-----------------------|-------------|-------------|---------|
| Variable | Frequen cy | Mean | Standard deviation | Mini mum | Maxi mum | P-value |
| Barij Laxy Herb | 30 | 31.10 | 6.70 | 18 | 41 | |
| Magnesi um hydroxi de | 30 | 30.80 | 6.33 | 18 | 43 | 0.86 |

Table 2 indicates that the mean age of both drug groups is nearly identical, at 31 years. In order to examine the correlation between age in two different medication groups, a t-test was employed. The results of the test indicate that the age distribution is statistically similar, with a significance level exceeding 0.05.

| | Yes | No | P- value | | Ye s | N o | P- value |
|----------------------------|-----|--------|-------------|--------------------------------|---------|--------|-------------|
| Barij Laxy Herb | 7 | | | Barij Laxy Herb | | | |
| Abdominal pain before | 9 | 2 1 | 0.004 | anal pain before | 10 | 20 | 0.008 |
| Abdominal pain after | 0 | 3 0 | | anal pain after | 2 | 28 | |
| Magnesiu m hydroxide | è | | | Magnesiu m hydroxid e | | | |
| Abdominal pain before | 21 | 9 | 0.001 < | anal pain before | 18 | 12 | 0.001 < |
| Abdominal pain after | 3 | 2 7 | | anal pain after | 4 | 26 | |

| Barij Laxy Herb | | | | Barij Laxy Herb | | | |
|----------------------------|----|--------|------|----------------------------------|----|----|-------|
| Headache before | 5 | 2 5 | | Nausea and vomiting before | 9 | 21 | 0.13 |
| Headache after | 1 | 2 9 | 0.12 | Nausea and vomiting after | 4 | 26 | |
| Magnesiu m hydroxide | | | | Magnesiu m hydroxid e | | | |
| Headache before | 11 | 1 9 | | Nausea and vomiting before | 12 | 18 | 0.004 |
| Headache after | 4 | 2 6 | 0.04 | Nausea and vomiting after | 3 | 27 | |

According to the findings presented in **Table 3**, a statistically significant difference was observed in the occurrence of abdominal pain before and after the administration of Barij Laxy Herb. Specifically, it is noted that before taking the medication, nine individuals had abdominal pain, whereas following the intake of Barij Laxy Herb, no instances of abdominal pain were reported.

Meanwhile, a significant difference was found in the administration of magnesium hydroxide for abdominal pain, both before and after its consumption. Specifically, out of a sample size of 21 individuals, abdominal pain was reported by all participants before consumption of Barij Laxy Herb. Conversely, following the administration of this medication, only 3 individuals had abdominal pain.

The present study examined the efficacy of the pharmaceutical intervention, Barij Laxy Herb, in alleviating anal pain. A comparative analysis of pre-and post-treatment data revealed a significant difference. Specifically, before the administration of Barij Laxy Herb, 10 individuals reported experiencing anal pain, whereas, after the drug's consumption, only 2 individuals continued to exhibit symptoms of anal pain.

There exists a significant difference in the occurrence of anal pain before and after the administration of magnesium hydroxide, specifically in the context of the Barij Laxy Herb medication. Before the consumption of this treatment, a total of 18 individuals experienced abdominal pain, whereas, after its ingestion, only 4 individuals reported anal pain.

There was no statistically significant distinction observed in the efficacy of Barij Laxy Herb in alleviating headaches when comparing its administration before and after taking the drug. The observed effects of Barij Laxy Herb medication were found to be minimal, with little discernible variation noted between the pre-and post-administration periods.

Afterward, the efficacy of magnesium hydroxide in alleviating headaches was examined. The results indicated a significant

T 11

disparity, with 11 individuals experiencing headaches before the administration of Barij Laxy Herb, and only 4 individuals reporting headaches after the consumption of this medication.

There is no statistically significant difference observed in the efficacy of Barij Laxy Herb in alleviating symptoms of nausea and vomiting when administered before and after their onset. The observed effects of Barij Laxy Herb medication were found to be minimal, with little discernible variation noted between pre- and post-administration.

There exists a significant difference in the consumption of magnesium hydroxide in alleviating symptoms of nausea and vomiting. Specifically, before the administration of Barij Laxy Herb, a total of 12 individuals experienced nausea and vomiting, whereas, after the ingestion of this medication, only 3 individuals reported such symptoms.

Table 4. Examining the Relationship between Consumption of Barij Laxy Herb and Magnesium Hydroxide and Bowel Movements Frequency Barij Interquart p-Media Minimu Maximu Laxy ile valu n m m Herb deviation е Frequency of bowel 3 2 2 1 movement s before 0.001 Frequency of bowel 7 3 1 movement s after Magnesi um hydroxid e Frequency of bowel 2 1 3 movement s before 0.001 Frequency < of bowel 7 3 2 6 movement s after

Table 4 examines the relationship between the two administered pharmaceuticals and the frequency of bowel movements, both before and after drug administration. The statistical test employed for this analysis was the Wilcoxon test. A significant difference was found in the frequency of bowel movements before and after the administration of Barij Laxy Herb. Before taking this drug, individuals exhibited an average of two bowel movements. However, after the consumption of Barij Laxy Herb, the average frequency of defecation increased to four occurrences. Besides, the researcher examined the frequency of defecation before and after the administration of magnesium hydroxide. The results indicated a significant difference. Specifically, before the ingestion of magnesium hydroxide, the average number of bowel movements for the participants was 2, however, after the administration of this medication, the average number of bowel movements increased to 6.

| Table 5. E | xamining the Ro Consistency in T | elationship betwo wo Drug Groups | een Stool | |
|--------------------------------------|-------------------------------------|-------------------------------------|-----------|--|
| Barij Laxy Variable Herb N (%) | | Magnesium hydroxide N (%) | p-value | |
| Normal | 21(42.9) | 28(57.1) | 0.02 | |
| Hard | 9(81.8) | 2(18.2) | | |

Table 5 presents an analysis of the relationship between stool consistency and the administration of two medications, Barij Laxy Herb and magnesium hydroxide. The statistical test employed to assess this relationship was the Chi-2 test, which revealed a statistically significant difference.

The objective of this study was to conduct a comparative analysis of the impact of Laxy Herb syrup and magnesium hydroxide in alleviating constipation among pregnant women. The statistical population of the study consisted of pregnant women experiencing constipation who were referred to the Educational Clinic of Jundishapour University of Ahvaz. The inclusion criteria for participants were being within the reproductive age range of 15 to 44 years and having no comorbidities. Following a comprehensive examination of comparable research endeavors, individuals were selected at random to participate in the study, and the necessary data was then extracted. The present study involved the examination of a sample comprising 60 pregnant women, divided into two groups of 30 individuals each. The participants were categorized into two groups: one receiving Laxy Herb syrup (n=30) and the other receiving magnesium hydroxide (n=30). In both groups, the prescribed dosage consisted of 10 cc of syrup administered after each meal. In the descriptive analysis of this study, qualitative variables were assessed using frequency (percent), whereas continuous quantitative variables were evaluated using mean (standard deviation). Additionally, t-tests, Wilcoxon tests, Chi-2 tests, and McNemar tests were employed for further analysis.

The findings of this study revealed that a significant proportion of pregnant women, specifically 36.7%, experienced symptoms of constipation before receiving any form of treatment. According to a study conducted by Lederle, a prevalence of 38% and 20% was seen among women who suffered constipation during the second and third trimesters of pregnancy, respectively (1). According to a more recent study conducted by Marshall et al, it has been observed that approximately 35% of women experience constipation during their pregnancy. The findings of this study conducted in Ireland, which involved a sample size of over 7000 patients, revealed that a higher percentage of women experienced constipation during pregnancy in their first delivery (35%) compared to those who had already given birth at least once before (39-42%) (3). The findings of these investigations align with the current study on the topic of constipation. Furthermore, a prospective study conducted in the United Kingdom assessed a cohort of 94 individuals by documenting

their symptoms throughout pregnancy. Subjects who exhibited two or more symptoms of the diagnostic criteria for Rome IV criteria for functional constipation were classified as having functional constipation. The researchers discovered that there is a larger incidence of constipation during the first and middle stages of pregnancy, which then reduces throughout the last trimester and postpartum period. According to this study, the occurrence of functional constipation during the initial, middle, final, and postpartum stages of pregnancy was found to be 35%, 39%, 21%, and 17%, respectively. Furthermore, it is worth noting that this finding once again intersects with the current research data(20). Some complementary methods such as using Rosa Damascena (21), acupressure (22) and Coconut oil ointment (23) have been reported to alleviate constipation during pregnancy.

The findings of the present study indicated that the administration of the Barij Laxy Herb medication effectively mitigates abdominal pain. Specifically, before the intervention, a total of 9 individuals reported experiencing abdominal pain. However, following the intervention, none of the participants reported any abdominal pain. Additionally, the usage of magnesium hydroxide was found to alleviate abdominal pain. The efficacy of magnesium supplementation in reducing abdominal pain was observed in a sample of 21 individuals. Before treatment, all participants reported experiencing abdominal pain. However, following the administration of magnesium, only 3 individuals reported the persistence of abdominal pain. This reduction in the prevalence of abdominal pain was considered statistically significant. In summary, it may be inferred that both medications have effectively alleviated abdominal pain. The study conducted by Paonam demonstrates the efficacy of laxative use in alleviating pain and constipation symptoms in pregnant women (11).

The study findings indicated that the administration of the Barij Laxy Herb medication resulted in a reduction in anal pain. Before the intervention, a total of 10 individuals reported experiencing anal pain, however after the intervention, only 2 individuals reported such pain. Additionally, the usage of magnesium hydroxide has shown 100% efficacy in alleviating anal pain. Before the intervention, a total of 18 individuals reported experiencing anal pain. However, after the administration of magnesium, only 4 individuals reported the persistence of anal pain. This notable decrease in the prevalence of anal pain signified a statistically significant reduction. In summary, it can be inferred that both medications have demonstrated a decrease in anal discomfort.

The findings of the present study indicated that the administration of Barij Laxy Herb medication did not result in a significant reduction in headache symptoms. Before the intervention, 5 individuals reported experiencing headaches, however, following the intervention, only one individual continued to experience this symptom. This observation suggested that factors other than the medication may have contributed to the initial occurrence of headaches. Among the sample of 30 individuals, only 5 individuals reported

experiencing headaches. While a higher incidence of headaches would have shown more significant results, the administration of magnesium hydroxide proved to be entirely efficacious in alleviating headache symptoms. Before the intervention, a total of 11 individuals reported experiencing headaches. Following the administration of magnesium, the number of individuals experiencing headaches decreased to 4, indicating a statistically significant reduction. In summary, it can be inferred that the utilization of pharmacological substances can contribute to the alleviation of headaches.

The findings of the present study indicated that the administration of Barij Laxy Herb medication did not yield a significant reduction in symptoms of nausea and vomiting. Before the intervention, a total of 9 individuals experienced symptoms of nausea and vomiting. However, following the intervention, the occurrence of these symptoms reduced significantly, with only 4 individuals reporting such manifestations. One possible explanation for this observation is that the incidence of nausea and vomiting was initially low, with only 9 out of 30 individuals experiencing these symptoms. It is plausible that the effectiveness of this intervention would have been more pronounced had the initial incidence been higher. Nevertheless, the utilization of magnesium hydroxide has demonstrated total efficacy in the mitigation of symptoms associated with nausea and vomiting. Before the administration of the medication, a total of 12 individuals exhibited symptoms of nausea and vomiting. Following the ingestion of magnesium, the occurrence of nausea and vomiting decreased to a mere 3 individuals, indicating a noteworthy reduction in symptoms. In summary, it can be inferred that the utilization of pharmacological substances can contribute to the alleviation of nausea and vomiting.

The findings of the present study indicated that the administration of the pharmaceutical agent Barij Laxy Herb resulted in a significant increase in the frequency of defecation, with individuals experiencing an increase from an average of three occurrences per week before treatment to seven occurrences per week after medication intake. However, it should be noted that the minimum frequency of bowel movements seen in both experimental groups was once before and after the administration of Laxy Herb medication. Nevertheless, the ingestion of magnesium hydroxide resulted in a significant increase in the frequency of defecation, with individuals seeing an increase from an average of three bowel movements per week before magnesium intake to seven bowel movements per week following magnesium administration. It is worth noting that both groups exhibited a consistent frequency of two bowel movements per week before and after the administration of magnesium medication.

Furthermore, the findings of this study indicated a statistically significant difference in stool consistency following the intervention when comparing the administration of two medications, Laxy Herb and magnesium hydroxide. Put simply, the group that received magnesium hydroxide medication exhibited a higher level of normal consistency of stool compared to the laxative group. In summary, it may be inferred that the efficacy of the magnesium hydroxide medication surpasses that of the Laxy Herb medication.

Conclusion

Regarding the notable incidence of constipation in pregnant women and their increased susceptibility to this condition due to reduced physical activity, it is imperative to offer effective and precise interventions to alleviate and enhance their condition. This study aimed to explore the comparative and impact of two pharmaceutical agents, namely Barij Laxy Herb syrup and magnesium hydroxide syrup. In general, it may be inferred that the efficacy and performance of the magnesium hydroxide medication surpass those of the Barij Laxy Herb treatment. Hence, it is advisable to employ magnesium hydroxide medication for the management of anal ulceration, symptoms of nausea and vomiting, as well as headache. Nevertheless, in the other cases that were examined, both medications exhibited satisfactory performance, albeit with magnesium hydroxide demonstrating a little superiority over Laxy Herb medication.

Acknowledgments: None

Conflict of interest: The authors declare that they do not have any conflict of Interest.

Financial support: Ahvaz Jundishapur University of Medical Sciences financially supported this research.

Ethics statement: The design of the study was approved by the Ethics Committee of Ahvaz Jundishapur University of Medical Sciences (Ref No: IR.AJUMS.REC.1400.706)

References

- Lederle FA. Epidemiology of constipation in elderly patients. Drug utilisation and cost-containment strategies. Drugs Aging. 1995;6(6):465-9.
- Cullen G, O'Donoghue D. Constipation and pregnancy. Best Pract Res Clin Gastroenterol. 2007;21(5):807-18.
- Marshall K, Thompson KA, Walsh DM, Baxter GD. Incidence of urinary incontinence and constipation during pregnancy and postpartum: survey of current findings at the Rotunda Lying-In Hospital. Br J Obstet Gynaecol. 1998;105(4):400-2.
- Derbyshire EJ, Davies J, Detmar P. Changes in bowel function: pregnancy and the puerperium. Dig Dis Sci. 2007;52(2):324-8.
- Snooks SJ, Barnes PR, Swash M, Henry MM. Damage to the innervation of the pelvic floor musculature in chronic constipation. Gastroenterology. 1985;89(5):977-81.
- 6. Spence-Jones C, Kamm MA, Henry MM, Hudson CN. Bowel dysfunction: a pathogenic factor in uterovaginal

prolapse and urinary stress incontinence. Br J Obstet Gynaecol. 1994;101(2):147-52.

- Heinonen OP, Slone D, Shapiro S. Birth defects and drugs in pregnancy: Publishing Sciences Group Inc., Littleton, Massachusetts, USA; 1977.
- West L, Warren J, Cutts T. Diagnosis and management of irritable bowel syndrome, constipation, and diarrhea in pregnancy. Gastroenterol Clin North Am. 1992;21(4):793-802.
- Mahadevan U, Kane S. American gastroenterological association institute medical position statement on the use of gastrointestinal medications in pregnancy. Gastroenterology. 2006;131(1):278-82.
- DiPiro JT, Michael KA, Clark BA, Dickson P, Vallner JJ, Bowden TA Jr, Tedesco FJ. Absorption of polyethylene glycol after administration of a PEG-electrolyte lavage solution. Clin Pharm. 1986;5(2):153-5.
- Paonam DC. A study to assess the effectiveness of fruit laxative on reduction of constipation among primi antenatal mothers in second trimester in selected rural areas, Babgalore. Int J Nur Edu and Research. 2021;9(2):131-6.
- Mahboubi M. Prunus domestica as effective and acceptable treatment for stool softening and relief of constipation symptoms. Songklanakarin J Sci Technol. 2021;43(4).
- Biswas L, Rahman AM. Practices of Medicinal Plants Used By the Local Peoples in Veterinary Medicine in Lohagara Upazila of Narail District, Bangladesh.
- Igwe EO, Charlton KE. A Systematic Review on the Health Effects of Plums (Prunus domestica and Prunus salicina). Phytother Res. 2016;30(5):701-31.
- Nyberg C, Hendel J, Nielsen OH. The safety of osmotically acting cathartics in colonic cleansing. Nat Rev Gastroenterol Hepatol. 2010;7(10):557-64.
- Sharkey KA, Wallace JL. Treatment of disorders of bowel motility and water flux; anti-emetics; agents used in biliary and pancreatic disease. Goodman & Gilman's the pharmacological basis of therapeutics. 2011;12:1323-49.
- Curran MP, Plosker GL. Oral sodium phosphate solution: a review of its use as a colorectal cleanser. Drugs. 2004;64(15):1697-714.
- Cunningham FG, Leveno KJ, Bloom SL, Spong CY, Dashe JS. Mcgraw-Hill; New York, NY, USA: 2014. Williams Obstetrics, 24e.
- 19. Trottier M, Erebara A, Bozzo P. Treating constipation during pregnancy. Can Fam Physician. 2012;58(8):836-8.
- Derbyshire E, Davies J, Costarelli V, Dettmar P. Diet, physical inactivity and the prevalence of constipation throughout and after pregnancy. Matern Child Nutr. 2006;2(3):127-34.
- Emaratkar E, Nili N, Hadavand S, Emadi F, Gholami-Fesharaki M. Evaluation of the effect of rosa damascena mill. product on constipation during pregnancy: a single-arm clinical trial. Int J Women's Health Reprod Sci. 2021;9(1).

- 22. Kirca AŞ, Kanza Gül D. Effects of self-acupressure on pregnancy-related constipation: A single-blind randomized controlled study. Explore (NY). 2021;17(5):463-468.
- 23. Jesmani E, Ebrahimzadeh Zagami S, Mazloum SR, Rakhshandeh H. The effect of Coconut oil ointment on

constipation symptoms in pregnant women with hemorrhoids: A randomized clinical trial. Iran J Obstet Gynecol Infertil. 2021;24(6):69-79.