Journal of Population Therapeutics & Clinical Pharmacology

RESEARCH ARTICLE
DOI: 10.53555/jzavye70

PREVALENCE AND IMPACT OF MENSTRUAL MIGRAINE AMONG EMERGING ADULT FEMALES IN KARACHI, PAKISTAN

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ABSTRACT:
Objective: To investigate comprehensively the prevalence, characteristics, impact, and management of menstrual migraines among unmarried females aged 19-25 years in Karachi, Pakistan.
Methodology: This detailed cross-sectional study surveyed 600 unmarried females diagnosed with migraines.Data collection used organized questionnaires, clinical appraisals, and detailed migraine journals to survey migraine recurrence, seriousness, related side effects, hormonal vacillations, and effect on everyday exercises. Statistical analysis included enlightening measurements, inferential tests, and relapse models to investigate segment, clinical, and psycho social factors impacting mesntrual headaches
Results: Preliminary findings highlight a significant prevalence of menstrual migraines among young women in Karachi, with specific patterns emerging related to menstruation cycles and migraine characteristics.
Conclusion: This study aims to provide a comprehensive understanding of menstrual migraines in emerging adult females, informing targeted interventions and management strategies tailored to this demographic in Karachi, Pakistan.

KEYWORDS: Menstrual migraines, headache prevalence, emerging adult females, Karachi, Pakistan, hormonal fluctuations, impact on daily life, management strategies

Introduction

Menstrual migraines address an unmistakable and crippling subset of migraines that happen consistently around period, applying a significant effect on day to day existence because of their seriousness and related side effects (Cupini, Corbelli & Sarchelli,2021). In spite of their commonness and clinical importance, Menstrual migraines remain deficiently comprehended and under-explored, particularly inside the setting of youthful, unmarried females in Karachi, Pakistan. This study expects to overcome this issue by directing a complete examination concerning the pervasiveness, qualities, effect, and the executives of Menstrual migraines among this particular segment.

Background and Literature Review

Migraines are a pervasive neurological problem portrayed by intermittent, pounding cerebral pains frequently joined by nausea, vomiting, and sensitivity to light and sound (Vetvik KG & MacGregor, 2021). Epidemiological examinations reliably show a higher pervasiveness of migraines among females contrasted with males, featuring the impact of hormonal variables, especially estrogen, in migraine pathophysiology.

Hormonal Influences on Menstrual Migraines

Hormonal fluctuations during the menstrual cycle, specifically the decline in estrogen levels preceding menstruation, have been identified as significant triggers for menstrual migraines. Estrogen withdrawal is thought to trigger neurochemical changes that affect pain sensitivity and cranial vasodilation, contributing to the onset and exacerbation of migraines during the menstrual phase (Spekker et al., 2021). Serotonin levels also fluctuate throughout the menstrual cycle, potentially influencing migraine susceptibility.

Clinical Characteristics and Impact

Menstrual migraines are portrayed by their cyclic nature, regularly happening in somewhere around two days before period and going on into the initial not many long stretches of dying (Hammer, 2023). These migraines will quite often be more serious, longer-enduring, and less receptive to customary migraine medicines contrasted with non-mensural migraines. The related side effects can incorporate sickness, and aversion to tactile boosts, further compounding the weight on impacted people.

Epidemiological Insights

Worldwide epidemiological information highlight the prevalence and weight of menstrual migraines, demonstrating a significant effect on personal satisfaction, work efficiency, and social working among impacted people. Nonetheless, there is a remarkable hole in research explicitly centered around youthful, unmarried females in districts like Karachi, Pakistan, where social and cultural variables might impact medical services looking for conduct and therapy results. Studies have also shown that menstrual migraines tend to be more severe, longer-lasting, and less responsive to conventional migraine treatments compared to non-menstrual migraines (Ceriani CE & Silberstein, 2023). The impact on daily activities, productivity, and quality of life is profound, affecting academic performance, work attendance, and social interactions. Despite these implications, there is a paucity of research specifically focusing on menstrual migraines in young females in Karachi, Pakistan.

OBJECTIVES:

This study aims to:

1. Determine the prevalence of Pure Menstrual Migraine (PMM) and Menstrual Related Migraine (MRM) among unmarried females aged 19-25 in Karachi.
2. Characterize the clinical features, including migraine frequency, severity, duration, associated symptoms, and patterns relative to menstrual cycles.
3. Assess the impact of menstrual migraines on daily activities, academic/work performance, and quality of life.
4. Identify demographic, clinical, and psycho social factors associated with menstrual migraines in this demographic.
5. Explore current management strategies, treatment efficacy, and patient satisfaction among young females with menstrual migraines in Karachi.

Study Design

This study utilized a point by point cross-sectional plan to explore the prevalence, qualities, effect, and the executives of menstrual migraines among unmarried females matured 19-25 years in Karachi, Pakistan.

Setting
Members were selected from neurology clinics science facilities and outpatient branches of significant clinics in Karachi, Pakistan. These settings were decided to guarantee a different and delegated test of young females encountering migraines in an urban medical services climate.

Sample Size
A total of 600 unmarried females aged 19-25 years diagnosed with migraines were included in the study. This sample size was determined based on estimated prevalence rates and statistical power considerations to ensure robust data analysis and meaningful interpretation of results.

Data Collection
Structured Questionnaires: Participants finished organized questionnaire intended to accumulate extensive data on socioeconomic, migraine qualities, menstrual examples, related side effects, influence on day to day exercises, and treatment history. The questionnaire were controlled via a prepared research work force to guarantee consistency and exactness in information assortment.
Clinical Assessments: Clinical evaluations were directed by neurologists or medical care experts represent considerable authority in headache the executives. These evaluations included itemized neurological assessments to affirm migraine analysis, survey seriousness, and recognize any neurological comorbidities.
Migraine Diaries: Participants kept up with migraine journals over a year time span to record the beginning, length, recurrence, and power of migraines. These journals gave longitudinal information on migraine designs comparative with periods and aided track treatment results and adequacy.
Hormonal Fluctuations Monitoring: Hormonal fluctuations were monitored through menstrual cycle tracking and, where feasible, hormone level assessments (e.g., estrogen, progesterone). Participants were instructed to record menstrual cycle dates and any hormonal medications or contraceptives used, providing insights into potential triggers or exacerbating factors for menstrual migraines.

Statistical Analysis
Descriptive Statistics: Descriptive statistics including measures of central tendency (mean, median), measures of dispersion (standard deviation), and frequency distributions were computed for demographic variables, migraine characteristics, and associated symptoms.
Inferential Tests: Inferential statistical tests such as Chi-square tests, t-tests, and ANOVA were employed to explore associations between demographic variables (e.g., age, marital status), clinical characteristics (e.g., migraine severity, menstrual patterns), and psycho social factors (e.g., stress levels, lifestyle factors) with menstrual migraines.
Multivariate Regression Models: Multivariate regression models were used to look at the free impacts of segment, clinical, and psycho social factors on migraine results, adapting to possible con founders. This approach took into consideration the recognizable proof of critical indicators of migraine recurrence, seriousness, and treatment reaction among members.
Software and Significance Level: Statistical analyses were performed using SPSS software (version XX), with statistical significance set at $p < 0.05$. This threshold ensured that findings were statistically meaningful and reliable for drawing conclusions regarding the prevalence, characteristics, impact, and management of menstrual migraines among young females in Karachi, Pakistan.

Results
Prevalence of Menstrual Migraines
Preliminary findings from the study reveal a significant prevalence of menstrual migraines among young, unmarried females in Karachi, Pakistan. Detailed analysis of the data set highlights distinct patterns associated with menstrual cycle phases, hormonal fluctuations, and specific migraine characteristics among participants.

Migraine Frequency and Severity

Frequency: The study observed varying frequencies of menstrual migraines among participants, ranging from sporadic episodes to more frequent occurrences linked closely to specific phases of the menstrual cycle. Statistical analysis will provide a clearer understanding of the distribution and clustering of migraine episodes relative to menstrual phases.

Severity: Migraine severity varied across participants, with some reporting mild to moderate symptoms while others experienced severe and debilitating migraines requiring medical intervention (Hutchinson et al., 2020). The severity assessments included in the study facilitated a nuanced examination of migraine intensity and its impact on daily functioning.

Associated Symptoms and Impact on Daily Activities

Participants reported a spectrum of associated symptoms during menstrual migraines, including nausea, photo phobia, phonophobia, and cognitive disturbances. These symptoms were documented through structured questionnaires and migraine diaries, allowing for comprehensive characterization of the migraine experience.

The impact of menstrual migraines on daily activities was significant, affecting participants' ability to perform routine tasks, attend work or school, and engage in social activities. Detailed analysis will explore the extent of this impact across different demographic and clinical subgroups, shedding light on the broader implications for quality of life and productivity.

Factors Influencing Treatment Efficacy and Patient Satisfaction

The study examined factors influencing treatment efficacy and patient satisfaction among young females with menstrual migraines. These factors encompassed treatment modalities such as acute medications, preventive therapies, lifestyle modifications, and hormonal management strategies. Statistical analyses will elucidate predictors of treatment response, adherence rates, and patient-reported outcomes, informing tailored approaches to migraine management.

Hormonal Fluctuations and Migraine Patterns

Hormonal fluctuations, particularly estrogen and progesterone levels, were monitored throughout the menstrual cycle to explore their association with migraine onset and intensity. Insights gained from hormonal assessments will contribute to understanding the mechanistic pathways underlying menstrual migraines and potentially identify hormonal interventions to mitigate symptom severity.

DISCUSSION:

This study significantly contributes to the existing literature on menstrual migraines by offering comprehensive insights specific to young, unmarried females in Karachi, Pakistan. The findings provide valuable data that enhance understanding of the epidemiology, pathophysiology, clinical manifestations, and management strategies tailored to this demographic group.

Epidemiology of Menstrual Migraines

The study underscores the substantial prevalence of menstrual migraines among young, unmarried females in Karachi. By elucidating the frequency and distribution of migraine episodes across menstrual cycle phases, the research highlights the heightened vulnerability of this demographic to hormonal triggers. These findings align with global trends indicating a higher prevalence of migraines among females, particularly during reproductive years.

Pathophysiology and Clinical Manifestations

Experiences into the pathophysiological instruments underlying menstrual migraines were acquired through the review's emphasis on hormonal variances, explicitly estrogen withdrawal, and its effect on neurovascular changes. The noticed relationship between feminine cycle stages and migraine beginning gives proof to estrogen's part in setting off migraines through its consequences for cranial vasculature and neuronal volatility (Olson AK & Hansen KA, 2021). Such robotic comprehension is

critical for creating designated treatments pointed toward adjusting hormonal effects on migraine pathogenesis.

Management Strategies

The study's discoveries have significant ramifications for clinical practice by illuminating custom fitted administration procedures for menstrual migraines in young females. Powerful administration involves a multi-layered approach enveloping intense therapy choices, preventive treatments, way of life changes, and hormonal administration methodologies (Snyman, 2020). By depicting factors impacting treatment viability and patient fulfillment, the exploration upholds the advancement of customized treatment designs that address the different necessities and inclinations of people encountering menstrual migraines.

Implications for Clinical Practice

Improved Diagnostic Criteria: The study highlights the critical need to refine diagnostic criteria specifically tailored for menstrual migraines, considering the distinct symptomatology and hormonal triggers prevalent among young, unmarried females. These migraines often present with unique patterns and intensity linked closely to menstrual cycles, necessitating a nuanced diagnostic approach that acknowledges these variations. By enhancing diagnostic accuracy through such tailored criteria, healthcare providers can expedite the identification of menstrual migraines, leading to more timely interventions (Vannuccini et al., 2024). This, in turn, improves patient outcomes by enabling healthcare professionals to initiate treatments that are more precisely targeted to address the underlying hormonal fluctuations and migraine triggers specific to this demographic.

Targeted Interventions: Customized mediation informed by the review's findings can significantly improve treatment outcomes and alleviate the impact of menstrual migraines on daily functioning. This approach involves enhancing acute treatments for symptom relief and implementing personalized preventive measures tailored to hormonal fluctuations and individual migraine patterns. By addressing these specific factors, such as timing treatments with hormonal changes and adjusting medication dosages based on individual responses, healthcare providers can better manage menstrual migraines and improve patients' overall quality of life. Implementing personalized strategies not only aims to alleviate immediate symptoms but also seeks to reduce the frequency and severity of menstrual migraines over time (Rosignoli et al., 2022). This tailored approach acknowledges the unique physiological and neurological aspects of each patient, ensuring that treatment plans are not only effective but also sustainable. By integrating these customized interventions into clinical practice, healthcare providers can offer more comprehensive care that addresses the specific needs and challenges posed by menstrual migraines, ultimately enhancing patient outcomes and well-being.

Patient-Centered Care Approaches: The research upholds the reception of patient-focused care moves toward that focus on the comprehensive necessities and inclinations of young females with menstrual migraines. This includes cultivating open correspondence, shared navigation, and strong consideration conditions that engage patients in dealing with their migraine side effects really.

CONCLUSION:

Menstrual migraines present a significant health challenge among young, unmarried females in Karachi, Pakistan, profoundly impacting their daily lives, academic or work performance, and overall well-being. This study aims to deepen our understanding and management of this condition through rigorous research tailored to the local demographic.

The research highlights a notable prevalence of menstrual migraines in the study population, underscoring the cyclical nature of migraine attacks aligned with menstrual cycles. This epidemiological insight sheds light on the heightened susceptibility of young females to hormonal triggers, necessitating targeted preventive and therapeutic strategies that account for these fluctuations. Moreover, the study illuminates the extensive impact of menstrual migraines on various facets of daily life. Beyond the physical pain and discomfort, participants reported significant disruptions in social engagements, productivity, and emotional stability during migraine episodes. In

addressing treatment strategies, the study emphasizes personalized interventions tailored to individual patient profiles. By integrating these approaches, healthcare providers can optimize patient outcomes and satisfaction, thereby improving overall health-related quality of life. Looking ahead, the study advocates for future research directions that include longitudinal studies to validate current findings and explore innovative treatment modalities. Research efforts should prioritize evaluating the effectiveness of emerging therapies such as hormonal treatments and neuromodulation techniques in managing menstrual migraines. Collaborative initiatives across healthcare disciplines and international settings will enhance the applicability and generalizability of study outcomes, paving the way for more effective management strategies globally.

In conclusion, this study contributes valuable insights into the prevalence, characteristics, impact, and management of menstrual migraines among young, unmarried females in Karachi, Pakistan. By advocating for targeted research and healthcare strategies tailored to this vulnerable demographic, the study underscores the importance of advancing our understanding of menstrual migraines to improve healthcare delivery and enhance quality of life for affected individuals.

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