

ORIGINAL RESEARCH

Retrospective study of prevalence of erectile dysfunction (E.D.) in a tertiary care hospital in Vindhya region

¹Dr. Gautam Tayade, ²Dr. Pushpendra Shukla, ³Dr. Ajay Patidar, ⁴Dr. Ashish Ghanghoria, ⁵Dr. Alkesh Kumar Meena

^{1,5}Senior Resident, Department of Surgery, Shyam Shah Medical College, Rewa, Madhya Pradesh, India

^{2,4}Associate Professor, Department of Urology, Shyam Shah Medical College, Rewa, Madhya Pradesh, India

³Assistant Professor, Department of Surgery, Sunderlal Patwa Government Medical College, Mandsaur, Madhya Pradesh, India

Corresponding author

Dr. Ashish Ghanghoria

Associate Professor, Department of Urology, Shyam Shah Medical College, Rewa, Madhya Pradesh, India

Received date: 15 April, 2024

Acceptance date: 17 May, 2024

ABSTRACT

Background: Erectile dysfunction (ED), defined as the consistent inability to achieve or maintain an erection sufficient for satisfactory sexual performance. The present retrospective study was conducted in the Department of Surgery, Shyam Shah Medical College and associated Super-speciality hospitals, Rewa, M.P., for a period of 18 months from 1st Feb. 2020 to 31st July 2021. **Materials and Methods:** This study was conducted on 1001 subjects in the age ranging from 18 to 60 years. Prevalence of E.D. was calculated based on the International Index of Erectile Function (IIEF-5) score assessment in the study sample based on the IIEF questionnaire. **Results:** A total of 1001 subjects were evaluated for IIEF-5 score and we can observe that the rates of ED were 29.06% in the group aged 18-30, 45.30% in the 30-40 group, 21.37% in the 41-50 group, 4.27% in the group aged 51-60 years. Out of 1001 subjects, 185 had E.D. Prevalence comes out to be 18.5%. **Conclusion:** E.D. is an increasingly common condition in men. A careful diagnostic evaluation and timely intervention can be curative. Social awareness and taboos are intervening factors to deal with.

Keywords: Erectile Dysfunction (E.D.), International Index of Erectile Function (IIEF)

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution- Non Commercial-Share Alike 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.

INTRODUCTION

Erectile dysfunction (ED), defined as the consistent inability to achieve or maintain an erection sufficient for satisfactory sexual performance.

The effects of erectile dysfunction can be devastating and include decreased quality of life of the patient as well as the partner's.

Erectile dysfunction is a prevalent problem. It is relevant to the practice of primary care physicians who attend patients who have co-morbidities that are considered medical risk factors for erectile dysfunction. The effective management will only promote a better overall health in men, improve the quality of the doctor – patient relationship and enhance compliance of treatment for chronic conditions. The introduction of oral therapy and wide research modalities has led to revolutionary change in E.D. management.

The contributing medical risk factors that may cause ED include chronic health conditions such as diabetes mellitus, vascular insufficiency, interruption of neural

pathways, genitourinary diseases, hormonal derangement, psychogenic factors and side effects of concomitant pharmacotherapy.

Medical field has shown great advancements in the management of the condition from psychoanalysis and sex therapy used alongside aphrodisiac, herbal supplements and hormonal treatments. The management of E.D. is a structured process that incorporates several clinical practice concepts for bringing the best therapeutic outcomes to patients.

According to the Massachusetts Male Aging Study (MMAS), one of the first epidemiological studies on ED involving a large number of subjects, the condition affects 52% of men between the ages of 40 and 70 years. Furthermore, by the age of 70, approximately 68% of men reported to have ED, suggesting that ED is age-dependent.

The treatment of ED starts from minimally invasive interventions like managing the modifiable risk factors such as life style modifications and underlying conditions, oral drugs, vasodilator agents and vacuum

erection devices. Surgical therapies are reserved for the subset of patients having contraindication to non surgical interventions or those having adverse effects from medical therapy and those who have penile fibrosis or penile vascular insufficiency. First-line therapy for ED is phosphodiesterase 5 inhibitors (PDE5Is), e.g. sildenafil, tadalafil, and vardenafil.

MATERIALS AND METHODS

This study was conducted in Shyam Shah Medical College's associated super speciality block, Rewa, Madhya Pradesh, India. Here we conducted the study on OPD basis, samples were randomly selected after taking proper consent and explaining the purpose of study. Subjects were patients attending urology OPD for various complaints. The subjects were evaluated through a questionnaire calculating the IIEF SCORE (International Index of Erectile Function).

We used the latest questionnaire containing 5 questions each with 5 options carrying various scores. The questionnaire was provided in the local language and based on this data was assimilated Prevalence of E.D. was calculated based on the IIEF-5 score

assessment in the study sample. The International Index of Erectile Function (IIEF) is a widely used, multi-dimensional self-report instrument for the evaluation of male sexual function. It is has been recommended as a primary endpoint for clinical trials of erectile dysfunction (ED) and for diagnostic evaluation of ED severity. The IIEF was developed in conjunction with the clinical trial program for sildenafil, and has since been adopted as the 'gold standard' measure for efficacy assessment in clinical trials of ED. It has been linguistically validated in 32 languages and used as a primary endpoint in more than 50 clinical trials. . This study was conducted on 1001 subjects in the age ranging from 18 to 60years.

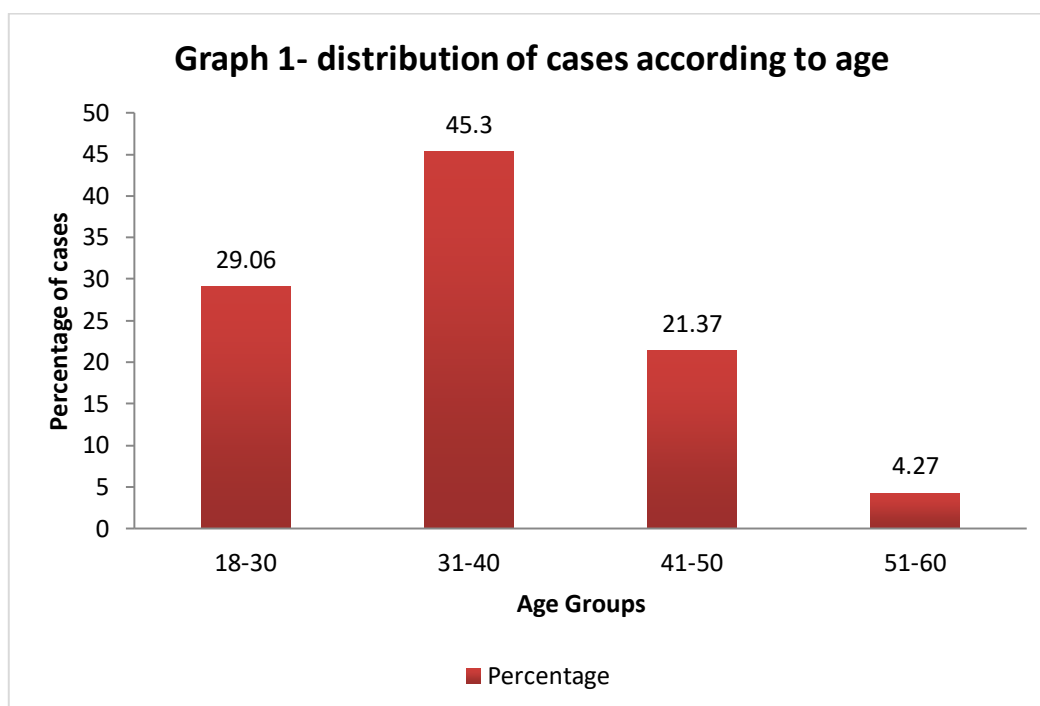
RESULTS

A total of 1001 subjects were evaluated for IIEF-5 score and we can observe that the rates of ED were 29.06% in the group aged 18-30, 45.30% in the 30-40 group, 21.37% in the 41-50 group, 4.27% in the group aged 51-60 years. Out of 1001 subjects, 117 had E.D. Prevalence comes out to be 11.68 %

Table 1- Distribution of cases according to age

| SN | Age group (in yrs) | No of cases | Percentage |
|----|--------------------|-------------------|--------------|
| 1 | 18-30 | 34 | 29.06 |
| 2 | 31-40 | 53 | 45.30 |
| 3 | 41-50 | 25 | 21.37 |
| 4 | 51-60 | 5 | 4.27 |
| | Total | 117 | 100.0 |
| | Mean±SD | 35.32±8.03 | |

The mean age of all patients was 35.22 years with a minimum age being 20 years and maximum age being 55 years. Maximum patients (53) were between 31 to 40 years accounting to 45.30%. Out of 117 patients in the study, 30 patients were among the age range of 41-60 years, accounting to 25.64%.



DISCUSSION

The present study on **“A PROSPECTIVE STUDY OF EFFECTS OF TADALAFIL IN ERECTILE DYSFUNCTION”** was conducted in Department of Surgery, super-speciality block of Sanjay Gandhi medical college, Rewa(M.P.) from February 2020 to July 2021 (18 Months) based on a cross-sectioned outline of non-institutionalized men with ages distributed between 18 and 60 y, from a center designated for the treatment of urological diseases with following aims and objectives: To assess IIEF 5 score (International Index of Erectile Function) in patients before and after treatment with Tadalafil

1. To study the effectiveness of Tadalafil on erectile dysfunction.
2. To study local incidence of erectile dysfunction.
3. To study the etiological factors leading to erectile dysfunction in male.
4. To study the role of various investigations in diagnosis of erectile dysfunction in male. Completing a sexual activity questionnaire was only mentioned during the interview at the office. The data in this study do not represent a randomly selected population from within a community but are from men seeking medical attention in a free screening program. It is possible, therefore, that these data might not represent the country or even regional status. People seeking medical attention in a screening program may be more concerned with their own health than the general population but, on the other hand, patients with co-morbidity and low quality of life might have no interest in participating in this type of program.

The erectile function in this study was based on subject responses to a privately administered questionnaire by a physician. Recently, Lehmann et al.¹¹ demonstrated that ED could not be defined by pharmaco-stimulated erection but relevant ED was honestly reported. As referred by Rosen et al.¹⁰ the IIEF-5 is intended to complement, not supplant, clinical judgment and useful diagnostic assessments. It may be particularly useful as an initial screening instrument in the general practice setting, mainly when we consider the progressive advent of recently available oral therapeutics for the treatment of ED. In epidemiological studies, when many people are assessed, a simple, practical and valid questionnaire is essential.

The IIEF is a multidimensional validated questionnaire with 15 questions in the five domains of sexual function (erectile and orgasmic functions, sexual desire, satisfaction with intercourse and overall sexual satisfaction) approved by the National Institutes of Health (NIH).¹ Its purpose is to unify the language used in studies with the intention of defining the prevalence of ED in different populations and countries.⁹ More recently, to simplify the IIEF an abridged 5-item version of this (IIEF-5) was developed as a diagnostic tool for ED.¹⁰ It consists of

five selected items to clearly discriminate between subjects with and without ED, as well as address the NIH definition of this condition. This simplified version, proved to be a valid specific and sensitive scale for use in the clinical setting.^{10,12}

ED has been described as an important public health problem by the NIH Consensus Panel,¹ which identified an urgent need for population-based data concerning the prevalence, determinants, and consequences of this disorder.⁶ As previously observed, the prevalence of ED depends on the population studied and the definition of this condition and methods used.^{5,13-15}

These aspects can explain the varied data of the 52% prevalence from a study in the USA,² 32% from a study in the UK, 26% in Japan, 19% in Denmark and 15.77% from a study in India.¹⁰

Prevalence of ED in our study was found to be 18.5%. Observed from set of another 1000 patients (who were screened actively) seeking medical advice in urology OPD for other complaints.

Male sexual disorders are found to be highly prevalent from 41 to 60 years of age when compared to other age groups.

Male erectile dysfunction is least among 26-30 years age group (8.6%) and highest among 51-60 years age group (27.6%). Premature ejaculation was not found among 18-25 years age group and in those above 60 years.

Studies performed in a select population with pathological conditions such as diabetes mellitus, heart disease or in institutions which provide attention for patients with specific andrologic diseases do not represent the true prevalence of ED in the general population. Another aspect is the fact that many studies using different questionnaires and definitions of ED have significant influence on the data obtained. Potency, defined as satisfactory functional capacity for erection, may coexist with some degree of ED in the sense of submaximal rigidity or submaximal capability to sustain the erection.¹⁶⁻¹⁸ Therefore, erectile function is best defined by the individual's assessment of his own situation in simple terms of minimal, moderate or complete as presented to a physician for treatment.^{9,17}

Although ED can be primarily psychogenic in origin, most patients have an organic disorder (vascular, neurologic, endocrine disorders), commonly with some psychogenic overlay.¹⁹⁻²¹

Some men assume that erectile failure is a natural part of the aging process and tolerate it; for others it is a devastating condition. Withdrawal from sexual intimacy because of fear of failure can damage relationships and have a profound effect on the overall relationship of the couple. The decrease of sexual activity has been frequently associated with the aging process.²²⁻²⁴ Normally, several causes are associated with ED with aging, which include, vascular insufficiency, hormonal disturbances, neuropathies, diabetes

mellitus, psychological factors and side effects of drugs usually used more by this population.

Sexual function progressively declines in healthy aging men. For example, the latent period between sexual stimulation and erection increases, erections are less turgid, ejaculation is less forceful, the ejaculatory volume decreases, and the refractory period between erections lengthens.²⁶ There is also a decrease in penile sensitivity to tactile stimulation, a decrease in the serum testosterone concentrations, and an increase in cavernous muscle tone.²⁶

In this prospective study, with men who were invited to participate in a screening program for prostate cancer, and who were not informed previously that their sex life would be assessed, the prevalence of all degrees of ED was 54.5%, similar to the results obtained by Feldman et al.² in the 'Massachusetts Male Aging Study' (MMAS), which was 52%, although several considerations have to be made regarding methodological aspects.

As demonstrated in the mean values of the IIEF-5 scores, in all age groups, decreased progressively with age.

We can observe that the rates of ED were 29.06% in the group aged 18-30, 45.30% in the 30-40 group, 21.37% in the 41-50 group, 4.27% in the group aged 51-60 years.

The difference in observation in our study can be attributed to the societal prejudice in seeking medical advice which can be attributed to various taboos.

Although, again data very similar to ours were observed by Feldman et al.² in the epidemiological study of MMAS, in which the rate of ED was 39% in the age group 40 – 49 y, 48% in those aged 50 y, 57% in those aged 60 and 67% in the 70-y group. Very few studies evaluated ED in men over 70. Some authors, such as Morley,³ referred to a 75% rate of ED in men 80 or over.

In the present study an interesting aspect is the high prevalence of ED in men over 60 y old. This aspect is very important because very few studies in the literature have reported the erectile condition in this select aged population.

Another significantly relevant aspect observed in the present study showed a high rate of severe degree and decrease in frequency of mild degree of ED with aging. This aspect can be best explained when we observe, for instance, that in the age group 41 – 50, nearly 72% have a mild degree of ED, but 40% have a severe degree of ED when we select the population over 60 y old..

The characteristic relationship between the probability of complete ED and the age of the individuals could also be observed in the MMAS,² so between 40 and 70 y it increases 3-fold, from 5.1 to 15%, and the moderate degree of ED increased 2-fold, 17 to 34%, although, the mild degree of ED was similar, 17%, presented the two extremes. Around 60% of men have normal erectile function at 40 y but only 33%

presented the same condition when men of aged 70 were considered.

In our experience, the simplified 5-item IIEF-5 used in this study was shown to be a simple and easy method for the evaluation of ED mainly when we consider epidemiological studies with a great number of individuals. This aspect is reinforced when we observe the low number of men excluded (9%) from the study, as well as, the characteristics of the results obtained. Another relevant aspect is the fact that the erectile condition or the severity of ED could be established when we used the questionnaire and probably easier than other methods. The evaluation of the erectile function with this method and the investigation of the association with risk factors for ED in others studies can establish health strategies and medical orientations to change the factors associated with this clinical condition and which will result in significant improvement for the difficult problems related to the aging process.

REFERENCES

- Desai RS, Sunil KK. Urological injuries during obstetric and gynaecological procedures: a retrospective analysis over a period of eleven years. *Int J Reprod Contracept Obstet Gynecol.* 2016;5(6):1916-20. <http://dx.doi.org/10.18203/2320-1770.ijrcog20161690>
- Thompson JD. Operative injuries to the ureter: prevention, recognition, and management. *TeLinde's Operative Gynaecology.* Rock JA, Thompson JD (ed): Lippincott Williams & Wilkins, Philadelphia, PA; 1997.8:1135-74.
- Gilmour DT, Dwyer PL, Carey MP. Lower urinary tract injury during gynaecologic surgery and its detection by intraoperative cystoscopy. *Obstet Gynecol.* 1999;94(5):883-9. [https://doi.org/10.1016/S0029-7844\(99\)00456-1](https://doi.org/10.1016/S0029-7844(99)00456-1)
- Ortiz-Martínez RA, Betancourt-Cañas AJ, Bolaños-Nañez DM, CardonaNarváez T, Portilla ED et al. Prevalence of surgical complications in gynaecological surgery at the Hospital Universitario San José in Popayán, Colombia. *Revista de la Facultad de Medicina.* 2018, 66(4):529-35. <http://dx.doi.org/10.15446/revfacmed.v66n4.63743>
- Bangal VB, Borawake SK, Shinde KK, Gavhane SP. Study of surgical site infections following gynaecological surgery at tertiary care teaching hospital in rural India. *Int J Biomed Res.* 2014;5(2):113-6. <https://doi.org/10.7439/ijbr.v5i2.527>
- Ustunsoz B, Ugurel S, Duru N K, Ozgok Y, Ustunsoz A. Percutaneous management of ureteral injuries that are diagnosed late after cesarean section. *Korean J Radiol.* 2008;9(4):348–53. <https://doi.org/10.1055/s-0035-1549378>
- Preston J M. Iatrogenic ureteric injury: common medicolegal pitfalls. *BJU Int.* 2000;86(3):313–7. <https://doi.org/10.1046/j.1464-410x.2000.00100.x>
- Erekson EA, Yip SO, Ciarleglio MM, Fried TR: Postoperative complications after gynaecologic surgery. *Obstet Gynecol.* 2011, 118(4):785-93. <https://doi.org/10.1097/AOG.0b013e31822dac5d>
- Bahadur A, Mundhra R, Kashibhatla J, Chawla L, Ajmani M, Sharma S et al. Intraoperative and Postoperative Complications in Gynaecological

DOI: 10.69605/ijlbpr_13.6.34

- Surgery: A Retrospective Analysis. *Cureus* 2021,13(5): e14885. <https://doi.org/10.7759/cureus.14885>
10. Barbosa RG, Garnica RL. Prevalence of complications and predisposing factors in gynaecological surgery due to benign pathology at the San Ignacio university hospital: Bogotá, Colombia. *Rev Chil Obstet Ginecol.* 2015,80(6):456-61. <http://dx.doi.org/10.4067/S0717-75262015000600005>
 11. Snehal AN, Kiran P. Study of surgical site infections following gynaecological surgeries in a tertiary care hospital. *MVP J Med Sci.* 2017,4(2):186- 92. <http://dx.doi.org/10.18311/mvpjms/2017/v4i2/10463>
 12. Pathak A, Mahadik K, Swami MB, Roy PK, Sharma M, Mahadik VK et al. Incidence and risk factors for surgical site infections in obstetric and gynaecological surgeries from a teaching hospital in rural India. *Antimicrob Resist Infect Control.* 2017,6(1):1-8. <http://dx.doi.org/10.1186/s13756-017-0223-y>
 13. Gevariya R, Oza H, Doshi H, Parikh P. Epidemiology, risk factors and outcome of complications in obstetric and gynaecological surgeries—a tertiary centre experience from western India. *J US-China Med Sci.* 2015,12(2):45-52. <http://dx.doi.org/10.17265/1548-6648/2015.02.001>
 14. Brummer TH, Jalkanen J, Fraser J, Heikkinen AM, Kauko M, Mäkinen J et al. FINHYST, a prospective study of 5279 hysterectomies: complications and their risk factors. *Human reproduction.* 2011;26(7):1741-51. <http://dx.doi.org/10.1093/humrep/der116>