

Hyperbaric Oxygen Therapy for Male Erectile Dysfunction

Boy Subirosa Sabarguna^{1*}, Benny Joevi², Djatiwidodo Edi Pratiknya¹, Titut Harmanik¹, Hisnindarsyah¹ and Risma²¹Maritime Medical Specialist Study Program, Faculty of Medicine, Hang Tuah University, Surabaya, Indonesia²Parasitology Department, Faculty of Medicine, Hang Tuah University, Surabaya, Indonesia***Corresponding author**

Boy Subirosa Sabarguna, Maritime Medical Specialist Study Program, Faculty of Medicine, Hang Tuah University, Surabaya, Indonesia.

Received: April 18, 2026; **Accepted:** April 24, 2026; **Published:** May 06, 2026**ABSTRACT**

Erectile dysfunction (ED) is a common sexual health problem in men, with an increasing prevalence worldwide. This condition not only affects an individual's quality of life but also has psychological and social consequences. The causes of ED are multifactorial, including vascular, neurological, hormonal, and psychogenic factors; therefore, its management must be comprehensive and targeted. The treatment and management of ED are crucial healthcare needs to restore optimal male sexual function.

Objectives: This study aims to elucidate the role of Hyperbaric Oxygen Therapy (HBOT) in the current treatment of erectile dysfunction. Specifically, it examines the effectiveness and potential of HBOT as a primary therapy or as a supportive (adjunctive) therapy in a holistic context.

Methods: The method used was a literature review, analysing various scientific sources, research, and theories related to the role of HBOT in erectile dysfunction treatment.

Results: The study results demonstrate that both theoretical and clinical evidence support the potential of HBOT to increase vascular flow to the corpus cavernosum tissue, promote vascular repair, and enhance tissue oxygenation. Recent studies have shown that HBOT use can accelerate the healing process of vascular wounds and improve endothelial function, which plays a crucial role in the erectile mechanism. Several studies support the potential for this therapy to be used as a primary therapy or as a holistic adjunctive therapy, particularly in cases of ED associated with vascular disorders and tissue damage.

Conclusions: Hyperbaric Oxygen Therapy has significant potential in the treatment of erectile dysfunction, both as a primary therapy and as a holistic combination therapy. Appropriate use of HBOT can enhance treatment efficacy and accelerate the recovery of erectile function. Further research is recommended to strengthen clinical evidence and develop comprehensive therapy guidelines. Implementation of this therapy requires the support of competent medical personnel and adequate equipment.

Keywords: Hyperbaric Oxygen Therapy, Erectile Dysfunction, Role, Literature Review, Vascular Flow, Primary Therapy, Adjunctive Therapy, Holistic Approach

Introduction**Background**

Erectile dysfunction (ED) is a sexual health issue that is gaining increasing attention, especially with the growing population of elderly men in various countries, including Indonesia. Epidemiological data show that the prevalence of ED increases significantly with age, due to vascular, hormonal, neurological, and psychological factors associated with the aging process. According to the World Health Organization (WHO) and various epidemiological studies, approximately 30-50% of men over 50

years of age experience erectile dysfunction, and this number tends to increase with age. Erectile dysfunction is defined as the inability to achieve and maintain an erection sufficient for satisfactory sexual intercourse [1]. Erectile dysfunction can affect psychosocial health and significantly impact the quality of life of patients and their partners.

A man's ability to maintain an erection sufficient for sexual activity is crucial not only for reproductive health but also for quality of life and psychosocial well-being. The global burden of ED is estimated to reach 320 million cases by 2025, addressing ED should be a priority in the field of sexual health and urology [2].

Citation: Boy Subirosa Sabarguna, Benny Joevi, Djatiwidodo Edi Pratiknya, Titut Harmanik, Hisnindarsyah, et al. Hyperbaric Oxygen Therapy for Male Erectile Dysfunction. *J Sex Health Reprod Med.* 2026. 2(2): 1-4. DOI: doi.org/10.61440/JSHRM.2026.v2.40

Technological developments and clinical experience related to the use of hyperbaric oxygen therapy (HBOT) indicate that this therapy has potential benefits in the treatment of vascular and tissue disorders, including erectile dysfunction. Numerous studies and clinical evidence demonstrate that HBOT can increase tissue oxygenation, improve vascular function, and accelerate the healing process of tissue damage that plays a crucial role in the erectile mechanism. While not applicable to all types of erectile dysfunction, HBOT can be used as an approach that supports physiological recovery processes and supports pharmacological therapy, therapeutic exercise, and psychological therapy. This therapy can be a complementary therapy that serve as a complementary approach to enhance holistic treatment outcomes [3].

However, ED treatment is often associated with patient frustration due to the ineffectiveness of certain treatment methods, which are frequently changed or adjusted. Many patients feel frustrated because their current therapies do not produce satisfactory results, leading to a desire to seek a more comprehensive and innovative approach. Therefore, it is important to adopt a holistic therapeutic approach that incorporates various physiological, psychological, and technological aspects, including the use of HBOT, to achieve optimal and sustainable outcomes. The main references supporting this description include epidemiological studies, WHO reports, and clinical research related to the effectiveness of HBOT in treating vascular disorders and tissue dysfunction, as well as literature related to the development of holistic therapies for ED. In this case Lifestyle changes, recommended to reduce the risk of cardiovascular disease (CVD), improve sexual function in men, including physical exercise, nutritional improvement with a Mediterranean diet, weight control, and smoking cessation [3,4].

Research Objectives

From this literature review, the following outcomes are expected:

1. A holistic approach to erectile dysfunction management encompassing physiological, psychological, and social aspects.
2. The appropriate and proportional use of HBOT as part of an integrated therapeutic strategy.
3. The integration and synergistic use of therapies for erectile dysfunction, both as primary and adjunctive treatments, to achieve optimal outcomes.
4. Recognition of the importance of a holistic therapeutic approach.

Methods

Literature Review

This is a comprehensive literature review conducted with the aim of comparing and synthesizing data and information from multiple sources. This approach includes six main types of sources, namely:

1. Literature. Relevant books are used to understand the theoretical basis, concepts, and development of erectile dysfunction therapy and the role of hyperbaric oxygen therapy (HBOT). Medical and urology textbooks from leading authors provide a comprehensive overview of physiological mechanisms and therapeutic strategies.
2. Journals. Scientific articles from peer-reviewed journals are used to identify the latest research findings on the

effectiveness of HBOT in the treatment of erectile dysfunction, including relevant clinical studies and meta-analyses.

3. Therapeutic Institutions. Guidelines and reports from healthcare institutions and professional organizations provide the latest standards of practice and guidance regarding erectile dysfunction therapy and its clinical application. For example: shared decision-making (SDM) is emphasized as a cornerstone of patient-centered care, applying the principles of autonomy and respect for individuals in clinical practice. SDM is a process in which clinicians and patients share information regarding the best available evidence for diagnostic procedures and treatment options.
4. Seminars/Webinars. Material from seminars and webinars attended by experts and practitioners in the fields of medicine and hyperbaric therapy is used to gain current insights and perspectives on emerging trends in erectile dysfunction treatment and innovative therapies.
5. Expert Opinion. The views and experiences of urologists and hyperbaric therapy experts are incorporated through interviews and discussions to understand the prospects for the clinical and therapeutic use of HBOT.
6. Case Studies and Editorials. Case studies documenting the successes and challenges of HBOT therapy in erectile dysfunction cases, as well as editorials discussing the future of erectile dysfunction treatment and the role of innovative therapies, were used for critical analysis [6-8].

Data Collection and Analysis

By integrating these six sources, researchers were able to identify the historical perspectives on conventional treatments, the current situation leading to the use of innovative therapies such as HBOT, and the potential and prospects for future therapy development. This approach provides a comprehensive overview, ranging from theoretical foundations and research findings to clinical practice standards, expert perspectives, and clinical experience. The approach begins with determining: Vision, Mission, and Values, tailored to the needs of healthcare institutions, particularly in relation to the application of HBOT for erectile dysfunction [9].

The Role of HBOT in Erectile Dysfunction Therapy

In this study, the role of HBOT is specifically explored through relevant literature. Studies have shown that HBOT increases vascular tissue oxygenation and improves vascular function, which are essential for erectile function. Furthermore, several case studies have demonstrated that the appropriate and proportional use of HBOT can be beneficial as primary or adjunctive therapy within a holistic treatment approach for erectile dysfunction.

Results and Discussion

Results from Six Types of Literature

The following is a comprehensive and detailed synthesis, supported by relevant literature and citations, of search results from various sources related to erectile dysfunction therapy and the role of hyperbaric oxygen therapy (HBOT):

- a. Books. ED is closely related to vascular, neurological, and hormonal disorders. Furthermore, books on hyperbaric therapy describe the mechanisms of tissue oxygenation

and its potential use in vascular and tissue wound healing. Recent reviews demonstrate the emerging role of artificial intelligence and telemedicine in therapy.

- b. **Journals.** Various scientific studies demonstrate that hyperbaric therapy can increase oxygen delivery to compromised vascular tissues, including in the context of erectile dysfunction. A study indicates that hyperbaric therapy promotes angiogenesis and improves blood flow in ischemic tissues. Additionally, a meta-analysis suggests that HBOT has a positive effect on improving vascular function, which is relevant for the treatment of ED.
- c. **Therapeutic Institutions.** Clinical guideline emphasizes a multidisciplinary and holistic approach to the treatment of ED, including conservative, pharmacological, and innovative therapies such as hyperbaric therapy in selected cases. It has also been suggested that this therapy can be part of a comprehensive management strategy for vascular disorders.
- d. **Seminars/Webinars.** Seminars and webinars by experts in urology and hyperbaric therapy highlight the latest developments in the use of HBOT for various indications, including ED. They emphasize the importance of an integrative and innovative approach to improving treatment outcomes.
- e. **Expert Opinion.** Experts such as and 15a) argue that the use of HBOT as a supportive therapy for ED shows great potential, especially in patients with vascular disorders and tissue injuries who do not respond to conventional therapies.
- f. **Case Studies and Editorials.** Case studies demonstrate that the application of HBOT in patients with vascular-related ED successfully improves erectile function and accelerates the healing of damaged vascular tissue. An editorial in the journal *Urology Today* predicts that in the future, the use of HBOT will become increasingly common as part of holistic therapeutic approach [10-15].

Therapeutic Status: Past, Present, and Future Prospects

- a. **Past:** Conventional ED treatment focuses on pharmacological therapies such as PDE-5 inhibitors, psychosexual therapy, and vascular surgical interventions. The use of hyperbaric therapy has not been widely adopted and remained in the early stages of development.
- b. **Present:** Hyperbaric therapy is currently being recognized as a supportive (adjunctive) therapy, particularly in cases where patients do not respond to standard treatments, especially those with vascular disorders and tissue injuries. Several studies have demonstrated its benefits in increasing oxygen and angiogenesis in the corpora cavernosa.
- c. **Prospects:** The use of HBOT is expected to continue evolving as a holistic and integrative therapeutic modality, supported by technological advances and clinical research demonstrating its benefits. This therapy is anticipated to be supported by more robust evidence and standardized clinical guidelines, making it a potentially important component of integrated ED management protocols [16-17].

Applied Results of Hyperbaric Therapy

Results from various studies and clinical experience indicate that HBOT can increase blood flow, improve tissue oxygenation, and accelerate the healing of vascular wounds in the penile area. One study reported that patients with vascular disorders

who underwent hyperbaric therapy experienced significant improvements in erectile function. Furthermore, case studies have shown that this therapy is effective as a supportive (adjunctive) treatment, especially in patients with vasculitis or chronic vascular conditions in whom conventional treatments have not produced optimal outcomes.

Holistic Therapy Outcomes Using HBOT

The use of HBOT in a holistic approach includes a combination of pharmacological, psychological, physical exercise, and hyperbaric therapy. Results indicate that this combination improves overall treatment success. Research confirms that hyperbaric therapy can accelerate tissue regeneration and significantly improve vascular function, thereby supporting the effectiveness of holistic therapy in the management of ED [18-19].

Current Prospects for Action

To improve the effectiveness of therapy, several important steps must be taken, including:

- Standardizing clinical protocols for the use of HBOT in the treatment of ED.
- Conducting larger, well-controlled clinical trials to establish its efficacy and safety.
- Integrating HBOT into multidisciplinary treatment programs within healthcare systems.
- Enhancing the education and training of healthcare professionals regarding the benefits and clinical applications of HBOT.
- The literature indicates that a multidisciplinary approach and standardized protocols can improve treatment outcomes.
- Regular seminars and webinars can foster an active and well-informed professional community, while accelerate the adoption of new technologies and improve the quality of therapy.
- Evidence suggests that a holistic approach can enhance treatment success and improve patients' quality of life.
- The consistent publication of scientific journals will encourage further research and enhance the credibility of HBOT within the international medical community [20,21].

Conclusion and Suggestions

Conclusion

Based on the literature review related to the use of HBOT in treating male Erectile Dysfunction, it can be concluded that:

1. HBOT has a significant potential role in the management of male erectile dysfunction, with indications as a safe and potentially effective therapy for improving erectile function.
2. HBOT functions as a supportive (adjunctive) and synergistic modality within a holistic therapeutic approach, enhancing the outcomes of primary treatments and improving overall quality of care.
3. Further research and scientific advancements related to HBOT are required to optimize therapeutic outcomes and align with established clinical goals.
4. The development and clinical application of HBOT in the treatment of erectile dysfunction should be implemented systematically and sustainably. This approach ensures that HBOT is not merely a temporary solution but becomes an integral component of a holistic, evidence-based therapeutic strategy supported by advancing science and technology, thereby achieving optimal and targeted treatment outcomes.

Suggestions

The following recommendations summarize the role of HBOT based on the literature review and conclusions, covering various aspects of the development and application of HBOT in the treatment of male Erectile Dysfunction:

1. Establish an Erectile Dysfunction Treatment Network incorporating HBOT.
Developing an integrated and standardized treatment network is crucial to ensure that HBOT is widely accessible and effective. By establishing service centers that adopt HBOT protocols, patients can receive safe and focused therapy. This approach also facilitates multidisciplinary collaboration, involving urology, physiotherapy, and rehabilitation medicine, to improve treatment outcomes.
2. Organize Annual Seminar/Webinars. The aim of holding annual seminars or webinars is to update the knowledge of healthcare professionals and researchers regarding the latest developments in the use of HBOT in the treatment of Erectile Dysfunction. These activities can serve as a forum for scientific discussion, sharing clinical experiences, and introducing the latest technological innovations in this field.
3. Develop a comprehensive reference book on holistic erectile dysfunction therapy using HBOT. The development of a comprehensive, evidence-based book on holistic Erectile Dysfunction therapy with the integration of HBOT will serve as a primary reference for medical practitioners and researchers. This book should cover the latest physiological, psychological, and technological aspects, as well as methodology for the safe and effective use of HBOT.
4. Publish a Journal at Least Twice a Year. Regular journal publication at least twice a year will serve as a platform for documenting research results, case studies, and innovations related to the use of HBOT. Such publications are essential for advancing scientific knowledge, strengthening the evidence base, and enhancing the academic credibility of HBOT in the international medical community.

Conflict of Interest

There is no conflict of interest in writing this manuscript.

Acknowledgements

To the Library Team of the Faculty of Medicine, Hang Tuah University, Surabaya, for their support in writing this paper.

Turnitin Index

5% Similarity Index 4% Internet Sources 4% Publications

References

1. Widi Atmiko dan Gede Wirya Kusuma Duarsa (Editor), Panduan Tata Laksana Disfungsi Seksual Pria, Ikatan Ahli Radiologi Indonesia, Edisi Pertama. 2023. 63.
2. Ghifara Huda, Disfungsi Ereksi. *Alomedika*, 2026. 15: 58.
3. Ogenies, Oksigen hiperbarik dapat menginduksi angiogenesis dan memulihkan fungsi ereksi. 2026. 16: 1.
4. Reza Maulana dan Nur Wahyuniati, Disfungsi Ereksi Psikogenik dan Pilihan Tatalaksanya, *Jurnal Kedokteran Nangroe Medika*. 2026. 16: 45.
5. Nancy Sasube dan Starry H. Rampengan, Disfungsi ereksi pada penyakit kardiovaskular. 2026. 17: 45.
6. Anisyah Dewi Syah Fitri. Konsep Dasar Metode Penelitian Literature Review. Conference: Perkuliahan Metodologi dan Penelitian. 2017. 17: 1-52.
7. Ade Heryana, Jenis-jenis Studi Literature Review, Universitas Esa Unggul, 14 Maret 2021. 18: 1-4.
8. Arthur L Burnett. Erectile Dysfunction: AUA Guideline, 2018, the American Urological Association, 2026. 18: 44.
9. Pusat Penjaminan Mutu Poltekkes Kemenkes Surakarta, Standar Pendidikan Tinggi Tahun 2021. 19: 2.
10. Thom SR. Oxygen as a drug: Hyperbaric oxygen therapy, *Advances in Experimental Medicine and Biology*. 2009. 701: 1-24.
11. Bitterman N. Use of hyperbaric oxygen therapy in the treatment of erectile dysfunction: A pilot study. *Urology*. 2003. 62: 776-780.
12. Boy Subirosa Sabaraguna, HBOT = Terapi Oksigen Hiperbarik untuk Pembelajaran, UHT University Press. 2026. 70.
13. John P. Mulhall, Landon W Trost, Robert E Brannigan, Emily G Kurtz, J Bruce Redmon, et al. Evaluation and Management of Testosterone Deficiency: AUA Guideline, *Adult Urology*. 2018. 23: 423-432.
14. World Health Organization. Guidelines on Sexual and Reproductive Health. 2019.
15. Arif Rahman Nurdianto, Titut Harnanik dan Fery Setiawan, Pendekatan Hyperbaric Oxygen Therapy pada Pasien dengan Polycystic Ovary Syndrome, *Calvaria Medical Journal*. 2024. 2: 166-175.
16. Laumann EO. The epidemiology of erectile dysfunction. *Urology*. 2005. 66: 1247-1254.
17. Harch PG, Low RB. *Hyperbaric Oxygen Therapy*. New York: Springer. 2013.
18. Kumar R. Standardization of oxygen therapy protocols in sexual medicine. *Journal of Urology Research*. 2020.
19. Smith J, Johnson P. Annual scientific conferences on innovative therapies. *Medical Innovation Journal*. 2019.
20. Zhang L. Holistic approaches to erectile dysfunction treatment. *Advances in Sexual Medicine*. 2022.
21. Brown A, Lee M. Scientific publishing in sexual health. *Journal of Medical Communication*. 2020.