

Synergistic Efficacy of Integrated Care (Syzygium jambolanum + Conventional Therapy) Vs Conventional Therapy Alone In Managing Type 2 Diabetes Mellitus: Randomised Controlled Trial



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Abstract

Diabetes mellitus is a chronic metabolic disorder characterized by persistent hyperglycemia resulting from impaired insulin secretion, insulin action, or both ¹. This study evaluates the synergistic efficacy of integrated care (Syzygium jambolanum combined with conventional therapy) versus conventional therapy alone in the management of Type 2 Diabetes Mellitus through a randomized controlled trial. The outcomes were assessed using the SF-36 questionnaire to evaluate changes in patients' quality of life and to compare the effectiveness of the two treatment approaches.

Keywords: Type 2 Diabetes Mellitus, Syzygium jambolanum, Integrated Care, Homoeopathy, Conventional Therapy, Randomized Controlled Trial, HbA1c.

Introduction

The prevalence of diabetes is increasing rapidly worldwide in both developed and developing countries. The World Health Organization (WHO) estimates a major rise in diabetes cases globally, with India being one of the most affected countries ². Diabetes is considered a global health burden, often referred to as the "diabetes capital" scenario in India due to its high prevalence.

The rising incidence of diabetes is strongly associated with urbanization, sedentary lifestyle, genetic predisposition, and unhealthy dietary habits. Type 2 Diabetes Mellitus is the most common form, characterized by insulin resistance and relative insulin deficiency³.

Conventional pharmacological therapy is effective in glycemic control; however, long-term use may lead to adverse effects such as gastrointestinal disturbances, hypoglycemia, and organ-related toxicity ⁴.

Homoeopathy is based on the principle of "law of similars" and uses highly diluted medicinal substances derived from natural sources ⁵. It is considered to offer a holistic and individualized approach with minimal side effects.

Important homeopathic antidiabetic remedies include *Gymnema sylvestre*, *Rhus aromatica*, *Syzygium jambolanum*, *Uranium nitricum*, and *Acid phosphoricum* ⁶. Among these, *Syzygium jambolanum* is traditionally considered useful in diabetes management and is reported to help reduce glycosuria and hyperglycemia^{6,7}.

Epidemiology

Type 2 Diabetes Mellitus accounts for approximately 90–95% of all diabetes cases globally⁸. According to the International Diabetes Federation (IDF), around 589 million adults were living with diabetes worldwide in 2024, with India contributing a significant proportion of cases⁹. The disease is more common in adults above 40 years but is increasingly being observed in younger populations due to obesity and sedentary lifestyle.

Etiology

Major risk factors include family history, obesity, physical inactivity, unhealthy diet, hypertension, dyslipidemia, and gestational diabetes history ³.

Classification of Diabetes Mellitus

The first widely accepted classification of diabetes mellitus was introduced by the National Diabetes Data Group (NDDG) in 1979 and later adopted by the World Health Organization in 1980¹⁰. It recognized two major types:

1. Type 1 Diabetes Mellitus
2. Type 2 Diabetes Mellitus

The American Diabetes Association later updated this classification, replacing older terms such as IDDM and NIDDM with Type 1 and Type 2 diabetes mellitus¹¹.

Major Types of Diabetes Mellitus

Type 1 diabetes is an autoimmune disorder causing destruction of pancreatic β -cells leading to absolute insulin deficiency¹¹.

Type 2 diabetes is the most common form and is associated with insulin resistance and relative insulin deficiency³.

Gestational diabetes develops during pregnancy due to hormonal insulin resistance and affects 3–5% of pregnancies⁸.

Other specific types include genetic defects, pancreatic diseases, endocrine disorders, and drug-induced diabetes¹¹.

Clinical Features

Common symptoms include polyuria, polydipsia, polyphagia, weight loss, fatigue, blurred vision, delayed wound healing, recurrent infections, and peripheral neuropathy^{3,8}.

Review of Literature

Conventional antidiabetic drugs such as metformin and sulfonylureas remain the mainstay of treatment, although long-term use may cause adverse effects and incomplete glycemic control in many patients.⁴

Syzygium jambolanum has demonstrated antidiabetic potential in experimental and clinical studies by improving glucose metabolism and insulin sensitivity¹².

Integrative medicine combining conventional therapy with complementary approaches has shown potential benefits in improving glycemic control and quality of life¹³.

Yoga has also been shown to improve insulin sensitivity, reduce stress, and enhance quality of life in patients with Type 2 diabetes mellitus¹⁴.

Interpretation

The findings suggest that both conventional and integrated therapies improve glycemic parameters. However, integrated therapy provides additional benefits in terms of quality of life improvement due to its holistic approach addressing physical, psychological, and social aspects of health.

Conclusion

Both groups show improvement in glycemic control, but integrated therapy demonstrates greater improvement in quality of life. Further large-scale randomized controlled trials are required to confirm long-term benefits and clinical effectiveness.

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