RESEARCH PAPER

"CLINICAL AND LABORATORY PROFILE OF TYPE 2 DIABETIC PATIENTS WITH ASYMPTOMATIC BACTERIURIA"

[1]Dr Puneeth C M, [2]Dr Ravi Nagarajiahah, [3]Dr Shashank B N

[1]*Junior Resident, Department of General Medicine, Adichunchanagiri Institute of Medical Sciences, Adichunchanagiri University, B.G. Nagara – 571448, Karnataka, India*

[2]*Professor and HOD, Department of General Medicine, Adichunchanagiri Institute of Medical Sciences, Adichunchanagiri University, B.G. Nagara – 571448, Karnataka, India*

[3]*Senior Resident, Department of General Medicine, Adichunchanagiri Institute of Medical Sciences, Adichunchanagiri University, B.G. Nagara – 571448, Karnataka, India*

Corresponding author: Dr Puneeth C M, drpuneethcm@gmail.com

ABSTRACT

Background:

Type 2 diabetes mellitus (T2DM) is a chronic metabolic disorder characterized by persistent hyperglycaemia resulting from insulin resistance, impaired insulin secretion, or both. Patients with T2DM are predisposed to urinary tract infections because of impaired host defence mechanisms, glucosuria, autonomic neuropathy and bladder dysfunction. Asymptomatic bacteriuria (ASB), defined as significant bacteriuria in the absence of urinary symptoms, occurs more frequently in diabetic individuals than in the general population and has been associated with female sex, advancing age, longer duration of diabetes, obesity and poor glycaemic control. Understanding the clinical and laboratory profile of T2DM patients with ASB may facilitate early identification of high-risk patients and reduce infectious and diabetic complications.

Objectives:

1. To ascertain the clinical characteristics of patients with Type 2 diabetes mellitus having asymptomatic bacteriuria.2. To evaluate the laboratory profile of patients with Type 2 diabetes mellitus having asymptomatic bacteriuria.3. To determine the association of asymptomatic bacteriuria with age, body mass index (BMI), duration of diabetes and metabolic control (HbA1c).4. To determine the prevalence of microvascular and macrovascular complications among patients with asymptomatic bacteriuria.

Methods:

A hospital-based descriptive study was conducted in the Department of General Medicine, Adichunchanagiri Hospital and Research Centre, B.G. Nagara, over 18 months (May 2024–December 2025). Adult patients with Type 2 diabetes mellitus satisfying the inclusion criteria were enrolled after informed consent. Detailed history, physical examination and laboratory investigations including urine routine examination, urine culture and sensitivity, HbA1c, renal function tests and other relevant biochemical investigations were performed. Demographic characteristics, glycaemic status, duration of diabetes, BMI, bacteriological profile and diabetic complications were analysed using appropriate statistical methods.

Results:

The study evaluated the clinical and laboratory profile of T2DM patients with asymptomatic bacteriuria. ASB was observed more frequently among female patients and in individuals with longer duration of diabetes, higher BMI and poor glycaemic control. Higher HbA1c levels showed a positive association with the occurrence of ASB. Escherichia coli was the predominant organism isolated on urine culture, followed by other common urinary pathogens. Patients with ASB also demonstrated a higher prevalence of diabetic microvascular complications, particularly nephropathy, with associated metabolic abnormalities suggesting increased renal risk.

Conclusion:

Asymptomatic bacteriuria is a common clinical finding among patients with Type 2 diabetes mellitus and is associated with poor glycaemic control, longer duration of disease and obesity. Identification of high-risk patients through clinical assessment and urine culture may facilitate early diagnosis and timely management, thereby reducing progression to symptomatic urinary tract infection and limiting diabetes-related complications.

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