



## PREVALENCE OF ASYMPTOMATIC BACTERIURIA IN GESTATIONAL DIABETES MELLITUS

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## ABSTRACT

Women with Diabetes Mellitus are considered immunocompromised and are therefore possibly more prone to develop infections of which the urinary tract is one of the most prevalent sites of infection. Moreover women with Diabetes Mellitus and a Urinary Tract Infection are more susceptible to severe and rare complications of UTI such as Xanthogranulomatous Pyelonephritis. Seeing these deadly complications of asymptomatic bacteriuria and increasing incidence of GDM in our population this study was carried out to identify these patients early, treat them with appropriate antibiotics and to emphasise the importance of screening in all pregnant women and especially in GDM. As always prevention is better than cure. Aim of good antenatal care is to ensure the wellbeing of both mother and child.

**KEYWORDS :** gestational diabetes, asymptomatic bacteriuria, urine culture

## INTRODUCTION:

"Urinary tract infections have plagued mankind long before bacteria were recognized."<sup>1</sup> Infection of urinary tract is one of the most common problems in pregnancy due to anatomical and physiological changes that take place in the genitourinary tract in pregnancy. It may be symptomatic or asymptomatic.

*Escherichia coli* accounts for 80–90% of infections.<sup>2</sup> *E. coli* is a rod shaped Gram-negative, facultative anaerobic and non sporulating bacterium. Strains that possess flagella are motile. The flagella have a peritrichous arrangement. *E. coli* have adhesions such as P and S fimbria, which increases the virulence of the organism.

Other Gram-negative bacilli, such as *Proteus mirabilis* and *Klebsiella pneumoniae*, can be cultured. *Proteus*, *Klebsiella* and most *Enterobacteriaceae* species show urease activity and form urinary calculi, which can act as reservoirs of infection. The coagulase negative cocci, *Staphylococcus saprophyticus*, is the second most frequently cultured uropathogen,<sup>3</sup> while other Gram-positive cocci, such as group B haemolytic streptococci, are less frequently isolated but remain clinically important.<sup>4</sup> Other less common uropathogens include *Staphylococcus aureus* and *Mycobacterium tuberculosis*, which can arise via haematological inoculation rather than ascending infection. Nonbacterial causes include *Chlamydia* species and fungal infections, such as *Candida albicans*.<sup>5</sup>

Keeping the complications of bacteriuria and GDM in mind, ASB should be treated with 7-day regimen of antibiotics, based on the sensitivity pattern. Urine culture is repeated after 2 weeks to see the effectiveness of the treatment.

Infection may cause stillbirth by several mechanisms, including direct infection, placental damage, and severe maternal illness. A urinary tract infection with *E. coli* is a non-genital tract infection may precipitate preterm labor with the fetus unable to tolerate labor and born dead.<sup>6</sup>

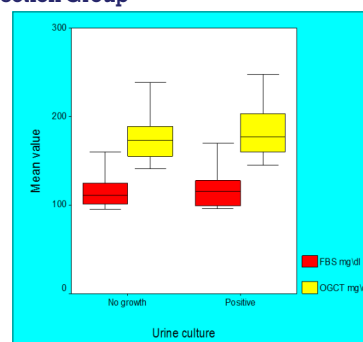
An association between urinary tract infection (UTI) and diabetes mellitus was noted in an autopsy series reported in the 1940s.<sup>7</sup> The urinary tract is the principal site of infection in diabetes. Changes in host defence mechanisms, the presence of diabetic cystopathy and of microvascular disease in the kidneys may play a role in the higher incidence of UTI in diabetic patients.<sup>8</sup>

Keeping the complications of bacteriuria and GDM in mind, ASB should be treated with 7-day regimen of antibiotics, based on the sensitivity pattern. Urine culture is repeated after 2 weeks to see the effectiveness of the treatment.

## CASE STUDY

In the present study, we studied the prevalence of asymptomatic bacteriuria in gdm pregnancy among hundred antenatal women attending the antenatal out patient department at Sree Balaji Medical college and hospital from 2019 JAN to JUNE, over a period of 6 months. Statistical significance was calculated using various methods.

**Figure 1: Box Plot Compares The Mean Fbs And Ogct Value Among Infection Group**



This box plot shows that prevalence of asymptomatic bacteriuria was higher in GDM women with high values of blood sugars (both FBS and OGCT) compared to GDM women with lower blood sugar values.

This study results, taken together with existing literature, suggest that there is high prevalence of asymptomatic bacteriuria in women with gestational diabetes mellitus.

India is marching forward as the diabetic capital of the world, let us not burden even the unborn child of the GDM mother with infections in the form of ASB. We must prevent infections by screening the high risk groups, at the earliest.

**Screen all antenatal mothers for ASB, especially GDM.**

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