

RESEARCH PAPER

URINARY TRACT INFECTION AMONG APPARENTLY HEALTHY COMMERCIAL TRANSPORT WORKERS IN EKPOMA AND ITS ENVIRONS WITHIN EDO STATE, NIGERIA.

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ABSTRACT

This study was designed to establish the prevalence of Urinary Tract Infection (UTI) among healthy-male commercial transport workers (taxi drivers and motor-cycle riders) in Ekpoma and its environs within Edo State, Nigeria. Eighty (80) urine samples were collected and using standard laboratory procedures, the prevalence of asymptomatic UTI was determined. The results showed that out of the 80 samples investigated, only 9 (11.3%) of them had asymptomatic UTI with a higher occurrence in samples obtained from taxi drivers and those within the age range of 35 - 45 years. None of the 29 motorcycle riders within the age range of 25 - 34 had UTI while 2 out of the 18 taxi drivers with age 25 - 34 had UTI. For those within the age range of 35 - 45, only 3 out of the 21 motorcycle riders and 4 out of the 12 taxi drivers had UTI respectively. In addition, *Klebsiella auregenes* and *Pseudomonas auruginosa* were the predominant isolates; with age playing a prominent factor. Therefore, as road safety campaigns are encouraged for transport workers, concerted efforts must also be made to enlighten them on the need to avoid risky sexual behaviours including drug and alcohol abuse.

Keywords: Urinary Tract Infections, Asymptomatic UTI, Personal hygiene, Transport workers.

INTRODUCTION

'Urinary Tract Infection' (UTI) describes the presence of bacteria or yeast in urine (Rubin et al., 1992). It is the commonest type of bacterial infection in humans irrespective of their age or sex (Hooton et al., 1997), and one of the leading causes of healthcare expenditure for people of all age groups (Vasquez and Hand (2004). According to Wyngaarden et al. (1992), UTI occur due to microbial colonization of urine and the invasion of any structure of the urinary tract by microbial organisms such as bacteria, viruses, yeasts and parasites. Other factors facilitating UTI infections, especially in rural settings, include malnutrition, poor hygiene and low socio-economic status (Ahmed and Avasara, 2008). Although *Escherichia coli* is considered as the predominant isolate causing urinary tract infection, few authors have reported changing patterns in the prevalence of uropathogens (Omoriegbe et al., 2008; Omoriegbe and Eghafona, 2009); with urinary pathogens from community patients having strains that are resistant to many commonly used antibiotics (Orrett, 2001).

UTI may be symptomatic (SUTI) or asymptomatic (AUTI) (Stamm and Hooton, 1993; Nicolle, 2003). AUTIs occur when urinary tract pathogens enter into the bladder without causing apparent symptoms. Such pathogens are typically eliminated by the human defense system if they persist only for a short time, but when the pathogen stays in the urinary system for a long time, SUTI may result (Ariyo et al., 2004; Adeyeba and Ojeaga, 2002). Available literature does show that a significant bacterial count in the urine, usually 10⁵cfu/ml in an individual without symptoms of urinary tract infections (UTI) (Smith, 1994), is termed *Asymptomatic Bacteruria*. However, this has changed from $\geq 10^5$ bacteria/ml urine before 1992 to $\geq 10^4$ bacteria/ml urine in order to accommodate the representation of slow-growing bacteria like enterococci and coagulase-



negative staphylococci (Grude *et al.*, 2001). Above all, AUTIs are associated with an increased risk of developing pyelonephritis, maternal and infant morbidity, preterm labour and low birth weight (Oyagade *et al.*, 2004).

Comparatively, the incidence of UTIs in males decreases dramatically after 2 years of age (Singh-Grewal *et al.*, 2005; Shaikh *et al.*, 2008). A twofold increase however, has been reported in men with incontinence managed with external condom-catheter drainage compared to men without condom catheters (Ouslander *et al.*, 1987; Hirsh *et al.*, 1979; Johnson, 1983). For institutionalized women and men, the presence of comorbid illness with an associated neurogenic bladder is likely the most important contributor to UTI (Nicolle, 1997), while prostatic hypertrophy in men promotes infection through urethral obstruction and turbulent urine flow and the additional risk of instrumentation. In addition, bacterial prostatitis, once established, become difficult to eradicate and may be a source for recurrent UTI over many years (Lipsky, 1989).

On the prevalence of AUTI, some available data show that Sweden records between one and three percent from neonatal period to school age (Rudolph, 1996), while Saudi Arabia has a prevalence rate of 5.3% (Omar *et al.*, 1992). In Nigeria, Akinkugbe *et al.* (1973) had reported a prevalence rate of 24 and 6% among rural and urban children respectively, while Okafor *et al.* (1993) found a prevalence rate of 2.1% in Enugu. Bello *et al.* (1998) however, reported an annual incidence of 6.5 per 1000 admissions for symptomatic bacteriuria. Of particular interest, is the fact that asymptomatic parasitic infections are endemic in Nigeria with *Escherichia coli* and *Schistosoma spp* being the most commonly reported bacteria and parasite associated with UTIs in the country, especially southwest Nigeria (Ariyo *et al.*, 2004). In most cases, AUTIs are neglected until infections become symptomatic with adverse effects, particularly in immune-stressed individuals infected with secondary urinary tract pathogens (Ayoade *et al.*, 2013). In virtually all cases of asymptomatic UTI, there is evidence of a local host response to bacteriuria (Nicolle, 1997). Among elderly institutionalized populations without indwelling catheters, the prevalence of bacteriuria varies from 25% to 50% for women and 15% to 40% for men (Nicolle, 2001).

Considering the classification of the 'transport sector' as being 'risky' due to its potentials in facilitating the spread of infections between high and low prevalence areas and the dangers associated with obvious pervasive sexual behaviours of transport sector workers (KMCC Uganda, 2014), this study therefore, was designed to determine the prevalence of Asymptomatic Urinary Tract Infections (AUTI) among healthy-male commercial transport workers (taxi drivers and motor-cycle riders) in Ekpoma and its environs within Edo State, Nigeria.

MATERIALS AND METHODS

Research Design and Duration: This study is a descriptive survey conducted between August, 2012 and March, 2013.

Ethical Consideration: The principle of voluntary participation and confidentiality was employed in this study and after thoroughly explaining the objective and significance of the study, an informed consent was requested and granted by each of participants. Concerted efforts were also made to notify the chairman of the various parks about the required investigations.

Study Population: A total of 80 apparently healthy male transport workers comprising 30 taxi drivers and 50 motor cycle riders from different parks in Ekpoma and its environs, were involved in this study. The parks visited included the Uromi Motor Park, Irrua Motor Park and School gate Motorcycle Park.

Inclusion and exclusion criteria: Only apparently healthy male transport workers were recruited for this study. Sick transport workers and those on antibiotic treatment were excluded.

Data and Sample Collection, and Analysis: The clinical histories as well as demographic details of the individual drivers and motorcycle riders were obtained and documented. Urine samples from the subjects were also obtained under aseptic conditions for standard laboratory analysis aimed at determining the UTI status of the subjects. Statistical analysis was performed using simple statistical tools (percentages).

RESULTS:

Out of the 80 commercial transport workers investigated, only 9 (11.3%) of them had asymptomatic Urinary Tract Infections; with a higher number observed among taxi drivers. The older transport workers within the age range of 35 - 45 years were observed to form the bulk of those infected as compared with the younger transport workers (25-34) (*See table 1*). In specific



terms, none of the 29 motorcycle riders within the age range of 25 – 34 had UTI while 2 out of the 18 taxi drivers with age 25 – 34 had UTI. For those within the age range of 35 – 45, only 3 out of the 21 motorcycle riders and 4 out of the 12 taxi drivers had UTI respectively (See table 1).

The laboratory results revealed that the predominant isolates from the urine sample collected were *Klebsiella auregenes* and *Pseudomonas aeruginosa* (Table 2). *Klebsiella auregenes* was predominant in 2 motorcycle riders and 5 taxi drivers, while *Pseudomonas aeruginosa* was predominant only one motorcycle rider and taxi driver respectively (Table 2).

Table 1: Age distribution of Motor Cycle riders and Taxi Drivers with asymptomatic UTI

Age Group	MOTORCYCLE RIDERS		TAXI DRIVERS		(NMR +NTD)	Grand Total ² with UTI
	NMR	No with UTI	NTD	No with UTI		
25-34	29	0 (0%)	18	2 (2.5%)	47	2 (2.5%)
35-45	21	3 (3.75%)	12	4 (5%)	33	7 (8.75%)
Total¹	50	3 (3.75%)	30	6 (7.5%)	80	9 (11.3%)

Keys: Total¹ = Total number of Subjects; Total² = Total number of subjects with UTI; NMR = total for motorcycle riders; NTD = total for taxi drivers; NMR + NTD = total for motorcycle riders and taxi drivers;

Table 2: Distribution of isolates in association with Motor Cycle Riders and Taxi Drivers

ISOLATES	MOTORCYCLE RIDERS	TAXI DRIVERS	TOTAL ²
<i>Klebsiella aerogenes</i>	2	5	7 (8.75%)
<i>Pseudomonas aeruginosa</i>	1	1	2 (2.5%)
Total ¹	3	6	9 (11.3%)

Keys: Total¹ = Total number infected with organism; Total² = Grand Total infected with organism

DISCUSSION

The observed prevalence of *Klebsiella aerogenes* and *Pseudomonas aeruginosa* barring limitations, support the findings of other studies that both organisms can be involved in asymptomatic UTI (Akinyemi *et al.*, 1997; Ebie *et al.*, 2001; Kolawole *et al.*, 2009; Mbata, 2007). It was also obvious that age played a major factor in defining the UTI status of the transport workers as UTI was more prevalent among the older transport workers than the younger ones. Interestingly, this is in line with the observations made by other researchers that urinary tract infection in adult males is more common among the elderly (Orr *et al.*, 1996) and this can be attributed to possible enlargement of the prostate, prostate debilitation and/or subsequent instrumentation of urinary tract (Ouslander *et al.*, 1987; Hirsh *et al.*, 1979; Johnson, 1983).

Another striking observation is the fact the transport workers with UTI were ignorant of their status, signifying an asymptomatic situation. This supports the assertion that asymptomatic bacteriuria occurs in both males and females with the absence of clinical signs or symptoms in the host (Nicolle, 2003). It must be realized however, that the pathogens associated with asymptomatic UTI can cause symptomatic UTI when left untreated for a long time (Ariyo *et al.* 2004; Adeyeba and Ojeaga, 2002) and according to Aiyegoro (2007), subclinical infections can sometimes lead to severe bilateral renal scarring and suggested that any urinary tract infection in an adolescent must be taken seriously.

Unfortunately, transport workers have doubtful health seeking behaviours and this in particular, can aggravate the likelihood of disease onset or complications secondary to asymptomatic UTI. According to the International Organization for Migration



(2013) and KMCC Uganda (2014), long distance truck drivers severally fail to seek healthcare services in a timely manner and are also known to face challenges in adhering to treatment regimens, owing to the perception that this would delay their travel schedules. In some instances, they under use or delay accessing health services in order to seek care at their state or country of residence (International Organization for Migration, 2013).

Similarly, the vulnerability of male transport workers can become further complicated by their tendency to use and abuse substances like drugs and alcohol. These substances are usually consumed to keep them awake for long hours, but the negative effects outweighs the positives, which in turn enhance their potency for risky sexual behaviors like indulging in unprotected casual sex (KMCC Uganda, 2014). In fact, reports have shown that in this situation, the driver's self protective judgment like the use of condom, become impaired (Matovu and Ssebadduka, 2013).

From the foregoing therefore, it is our opinion that as road safety campaigns are encouraged for transport workers, concerted efforts must also be made to enlighten them on routine basis, about the importance of regular medical check up and the need to seek prompt medical help when the need arises. They must also be encouraged to maintain personal hygiene and curb risky sexual behaviours, self medication and the abuse of substances –drugs and alcohol. These of course would enhance their health, overall safety on the roads, and efficiency in service delivery.

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AUTHOR’S CONTRIBUTION

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