
Antimicrobial Effect of Camel Urine in Some Human Pathogenic Bacteria

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Abstract:

Introduction: Camel's urine has numerous uses, which are beneficial for man, although some study had proved that camel's urine has a lethal effect on bacterial, there is very little information about the antimicrobial effects of camel urine on various microbial infecting to human beings.

Objective: study antimicrobial activity of camel urine against some bacteria isolated from human and to isolate bacteria that may found in the camel urine.

Methods: Fifty samples of camel urine were tested for their antimicrobial activity using Mueller-Hinton Agar. As camel urine is used for treatment in humans; all isolates tested were human sources *S. aureus*, *E. coli*; *Proteus mirabilis*, *Klebsiella pneumoniae*, were used in the test.

Results: Tested bacteria showed resistance to all camels' urine samples, camels' urines samples were cultured in basic media, 11 bacteria were isolated include 7 gram negative bacteria and 4 gram positive

Conclusion: antimicrobial sensitivity of camel urine showed that there was no in vitro effect to the tested bacteria, different type of gram positive and gram negative bacteria were isolated.

Introduction:

Camel name given to two species of mammals which are members of the family Camelidae in the order Artiodactyla These are the Bactrian camel (*Camelus bactrianus*) and the Arabian or dromedary camel (*C. dromedarius*).¹

Camel's urine contains a large amount of potassium, as well as albumen and magnesium, because the camel only drinks four times during the summer and once during the winter, which makes it retain water in its body so as to preserve the sodium, and the sodium causes it not to urinate a great deal, because it keeps the water in its body.²

Camel's urine has numerous uses which are beneficial for man. This is indicated by the Prophetic texts and confirmed by modern science. Camel urine uses for treatment of various diseases, such as parasitic infection (fasciolosis),³ although some study had proved that camel's urine has a lethal effect on bacterial, there is very little information about the physical and biochemical properties and antimicrobial effects of camel urine on various microbial infecting to human beings Information of the characteristic of camel urine and its benefits is limited. Data available show, however, significant antimicrobial activates against some pathogenic microbes infected human such as *staphylococcus aureus*,

pseudomonas aeruginosa, *Escherichia coli*, and other pathogenic microbes.⁴ Camel urine can use to treatment of fungal infection such as ringworm, tinea.⁵

Arabs used to drink boiled urine to cure some internal problems, particularly hepatitis Liver swelling and abscesses. On the other hand, they let out their camels on certain grasses and use their dried urine topically to treat burns and soft bleeding injuries.⁵

It was used for treatment of ladies head hairs, stomach pain (mixed with milk), gum and teeth pain, eyes affections, skin injuries and infections, snake bite, pregnant woman, liver tumors, prevention of thirsty and hungry and to wake up drunk man.⁷

Camel urine can use also anti carcinogenic agent, which described experimentally by Kabarity et al, 1988, who showed that treatment by colchicines inhibited formation of c- tumour in *Allium cepa* root tips.³

Material and Methods:

A total of 50 samples of camel urine were collected in sterile bottles and keep at 4°C. Sample collected from shambat, El moilih alsamrab and Tambool area of the Sudan during July 2011.

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The whole urinary bladder was taken from slaughtered healthy camels from tambool and transported at 4°C to the laboratory. The surface of the bladder was swabbed with 70% alcohol before five ml amounts of urine were transferred into sterile bottles using sterile syringes.

The other way was collecting the urine directly from the camel when they urinate in sterile container, Urine was collected aseptically from varies male female virgin, pregnant or lactating with different age healthy camels. The urine was collected from farm and desert living animals. The collection of urine was usually conducted during the feeding time and was performed by experienced attendants. Urine was allowed to flow directly into stainless steel containers and then transferred to urine container other directly to urine container.

Transport of sample:

Samples were put in container full with ice then transferred into the lab.

Antimicrobial test of camel urine:

Fifty samples of camel urine were tested for their antimicrobial activity using Mueller-Hinton Agar. As camel urine is used for treatment in humans; all isolates tested were human sources *S. aureus*, *E. coli*; *Proteus mirabilis*, *Klebsiella pneumoniae*, were used in the test. Sterile discs 6 mm in diameter from filter paper (whatman No.2) were used. The discs were impregnated with the test urine and dried at 37°C for 30 min. An overnight broth culture of each of the different organisms was used. Standard diffusion method was used; cultures were diluted with Nutrient Broth to a density equivalent to that of the standard

prepared by adding 0.5 ml of 1% BaCl₂ to 99.5 of 1% H₂SO₄.⁸

Results:

A total number of fifty camels' urine samples collected from tambool, almoeleh, esrana farms and Khartoum university farms during the period 2011-2012 were enrolled in this study, of these (18%) were males camels, while (82%) females. (figure 1)

The age of the camels range between 1 to 10 years old, (19) camels located between 1-3 years, (18) camels were located between 4-6 years and (13) camels were located between 7-10 years. (Figure 2)

Pregnant camel's represent (14%) of the study group, Lactation camels (22%) and Virgin camels (26%) (Figure 3)

Type of camel's nutrition's divided into Ombaz and barsem (34%) and wild trees (66%). (Figure 4)

All camels' urines samples were cultured in basic media (nutrient agars), 11 bacteria were isolated include 7 gram negative bacteria and 4 gram positive (figure 5)

Gram negative bacteria include, 2 *E. coli*, 2 *salmonella*, 1 *proteus*, 1 *morganella* while gram positive bacteria isolated were *staph auris*. (figure 6)

Antimicrobial effect of camel urine was tested against gram negative bacteria and gram positive bacteria. (*S. aureus*, *E. coli*, *Proteus*, *Salmonella. spp*, *Klebsiella. Pneumoniae* and *Shigella. Spp*).

Tested bacteria showed resistance to all camels' urine samples, Antimicrobial sensitivity test method used in this study include disc diffusion and agar dilution.

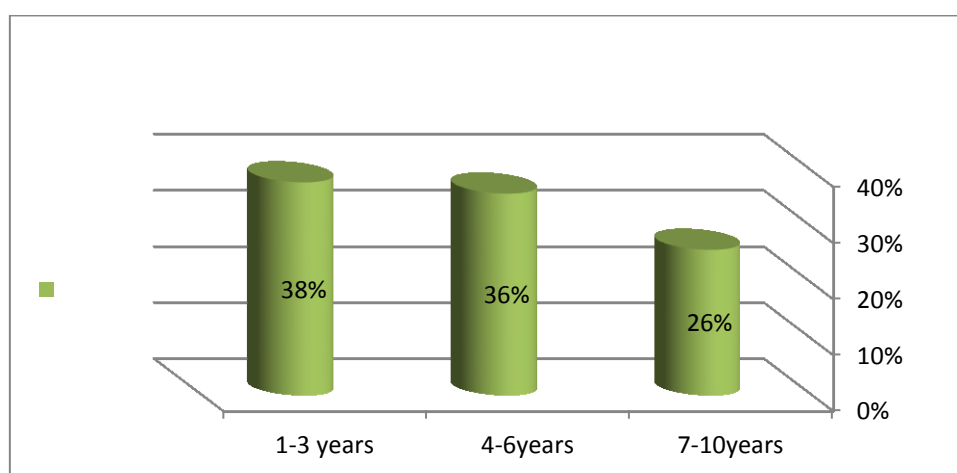


Figure (1): Showing age distribution between camels

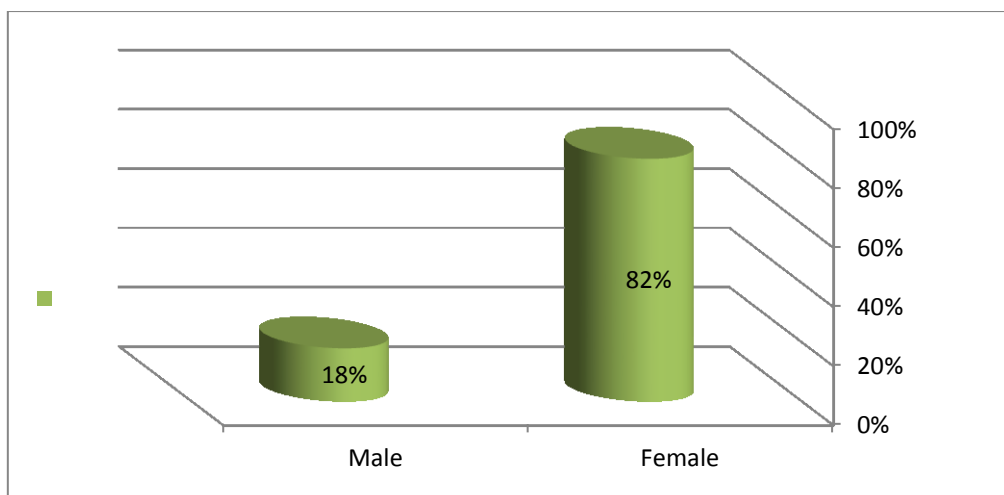


Figure (2): Showing gender distribution

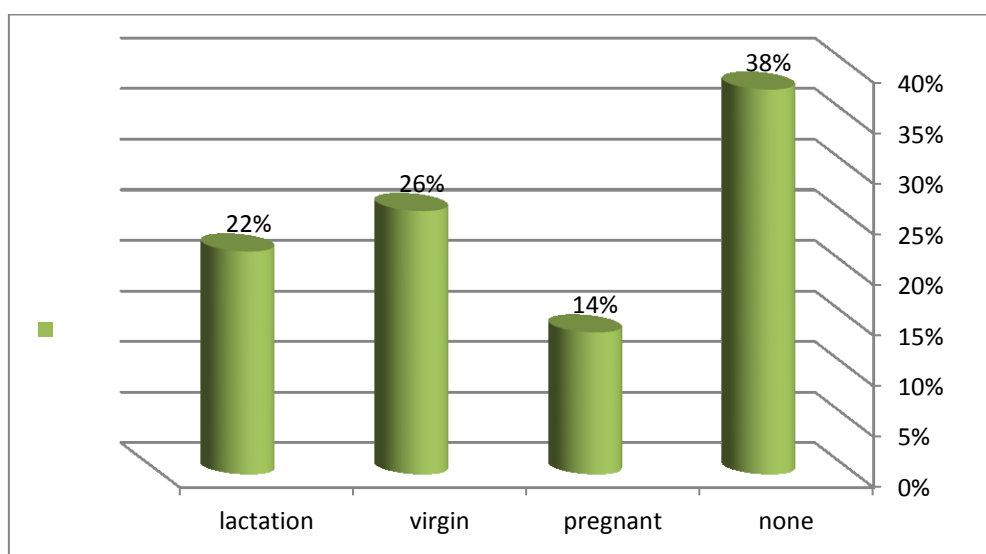


Figure (3): Showing female condition

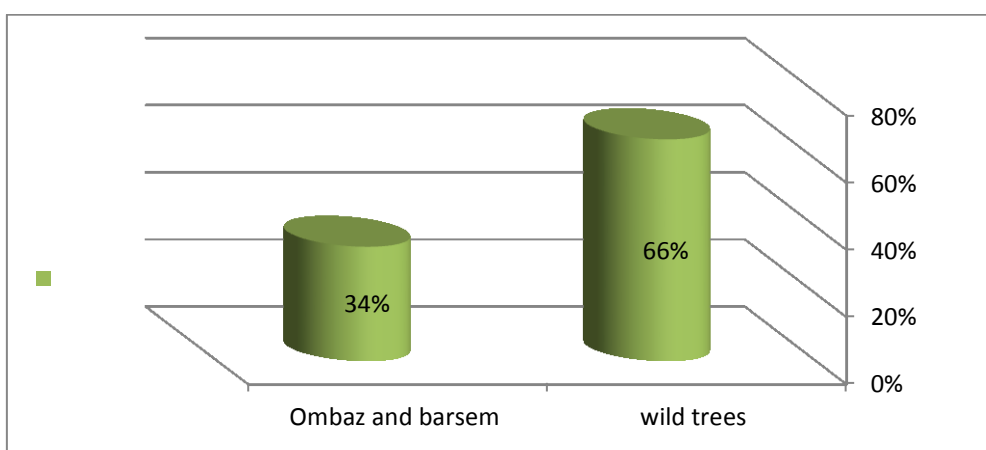


Figure (4): Showing nutrition type

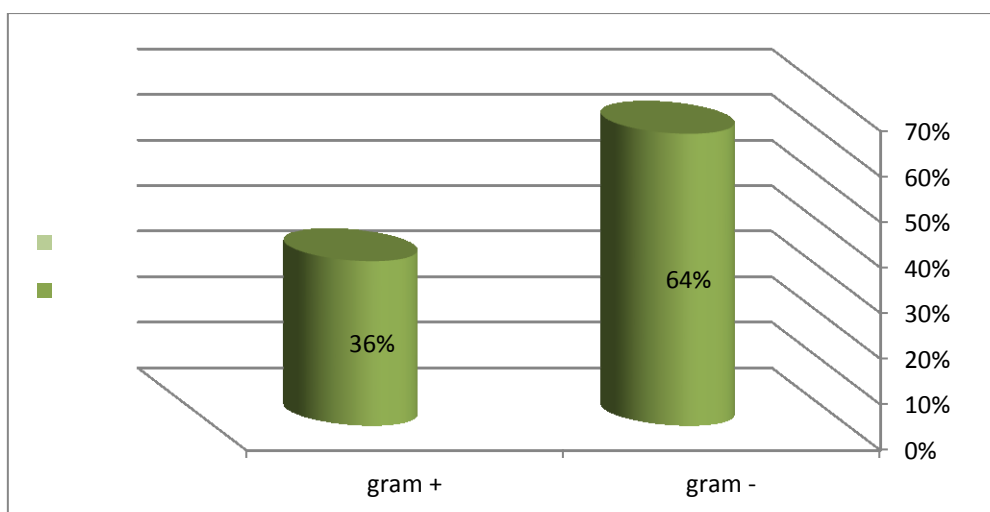


Figure (5): Showing gram stain result of isolated bacteria

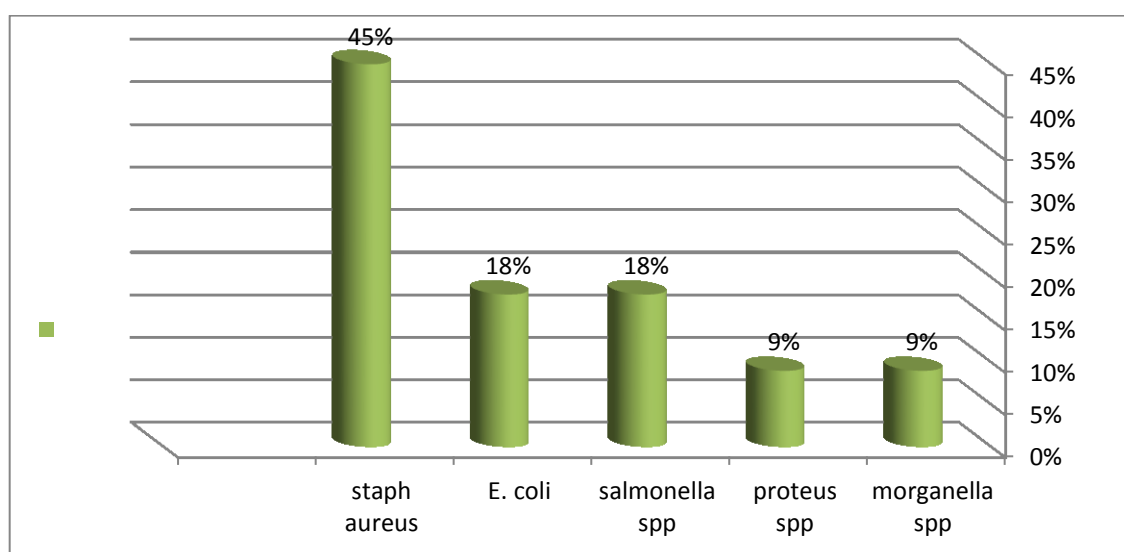


Figure (6): Showing isolated bacteria from camel's urine samples

Discussion:

Long time ago many studies in camel's urine, suggests that it has numerous uses which are beneficial for man. Scientific experiments have proven that camel's urine has a lethal effect on the germs that cause many diseases.

In the present study we observed antimicrobial effect of camel's urine to bacteria strains include: *S. aureus*, *E. coli*, *Proteus. spp*, *Salmonella. spp*, *K. Pneumoniae* and *Shigella. spp*.

Result of agar dilution and disc diffusion of camel's urine showed there was no antibacterial effect to the tested bacteria.

Our result in agree with study done by Munir Mustafa AL-Bashan, which they reported that, regarding antibacterial activity of camel urine with 25, 50, 100% concentration, no growth

inhabitation zones were observe after 24 hours of incubation of all the culture media for whole bacteria used.⁹

Our result disagree with Muna and his colleagues result which found that *Staphylococcus aureus*, *E.coli*, *Salmonella sp.* and *P. aeruginosa* proved to be sensitive to camel urine and agree with our result in *Proteus mirabilis* and *Klebsiella pneumoniae*, which were not sensitive to camel urine.

Our result founded that , eleven bacteria isolated from cultured urine samples distribute into gram positive and gram negative, *Staph aureus* represent high bacteria isolated with 45%, *E. coli* 18%, *salmonella spp* 18%, *proteus spp* 9% and *morganella spp* 9%.

Muna and his colleagues reported that, eleven bacterial isolates were obtained from different camel urine samples. One isolate of each of *Staphylococcus hyicus*, *S. haemolyticus*, *S. capitis* and *S. hominis*, *Corynebacterium xerosis*, *C. Striatum*, *C. pseudodiphtheriticum*, *Bacillus cereus*, *Manhemia heamolyticum* and

two isolates of *Micrococcus spp.*¹⁰ The difference between isolated due to different of camel nutrition and environment.

Our result in almost agree with Salha and his colleagues, which they isolated *Staphylococcus aureus*, *E.coli* and *Lactic acid bacteria*.¹¹

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