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Short Communication

Prevalence of Pneumonia and Antibacterial Activity of Processed Stag Horn Against *Klebsiella pneumoniae*

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ABSTRACT

Kushta barasingha (processed stag horn) was evaluated for its *in vitro* antibacterial activity against *Klebsiella pneumonia*. Macconkey agar medium was prepared in melted form and one gram of Kushta was added to it. After pouring media in to the petri plates, *Klebsiella pneumonia* was streaked and incubated at 37ºC for 24 h. No growth appeared on plates, hence Kushta proved to be effective against pneumonia caused by *Klebsiella pneumonia*.

Key Words: Pneumonia; Antibacterial activity; Stag horn; *Klebsiella pneumoniae*

INTRODUCTION

In Unani medicines, Kushta barasingha (processed stag horn) with one-tablespoon honey is given to the patients of all the lower respiratory tract diseases. Although patients of Flu, Tuberculosis and Pneumonia have been reported to recover, yet there is no scientific evidence about the antibacterial activity of Kushta barasingha (Nadkarni, 1980). Kushta barasingha is available in three forms. Grain form, paste and powder form. Paste is a liquid cream obtains by rubbing the stag horn on a piece of stone, pouring hot water over it from time to time. Paste is given with brandy or ammonia. In grain form, freshly cut horn is burnt in open fire, soaking its pieces in milky juice of *Calotropis gigantean* and then roasting. Its dose is 5-15 grains. Powder may be prepared by mixing ash with Sulphuret of Antimony and subjecting the mixture to white heat. It is also useful for the relief of Rheumatic fever and pain in ribs (Nadkarni, 1980).

The horns consist of three anterior antlers, curved upward, dark brown and pale yellow in colour generally marked with longitudinal ridges, which are irregularly tuberculated. Antlers are used to prepare Kushta barasingha. Antler growth completed after the sixth year in Sika deer (Hayden *et al*., 1994).

Klebsiella species is generally regarded as Enteric bacilli because frequently present in enteric tract. In general, these bacteria act as commensals when they are in intestine. *K. pneumoniae* are casually known as Friedlanders bacillus, found in soil and water. In upper respiratory tract, they are heavily encapsulated, posses fimbriae. Colonies on blood agar are usually large, with mucous and viscous consistency. Polysaccharide capsule contain hexoses and uronic acid (Burrows, 1986). *K. pneumoniae* are facultative anaerobes, nonmotile, reduce nitrates to nitrites, hydrolyze urea to ammonia and water, break down lysine in to an amine product and carbon-dioxide (Finegold & Baron, 1986). Pneumonia caused by *K. pneumoniae* makes up a small proportion of all the cases but fatality rate is 90%. It has greater tendency to produce necrosis than *Streptococcus pneumoniae* (Joklik & Willet, 1972). Morover, it is resistant to ampicillin and carbenicillin (Finegold & Baron, 1986).

This paper describes the antibacterial activity of Kushta barasingha against *K. pneumoniae*

MATERIALS AND METHODS

This research was conducted at Government Services Hospital, Islamabad. Bacterial growth medium was prepared by adding 50 mL of distilled water in 2.5 g of Macconkey agar, boiled and autoclaved at 121ºC temperature and 15-PSI pressure per square inches. One mL of Kushta solution prepared by mixing one gram of Kushta powder in 1 mL of sorbitol was added in melted form of Macconkey agar. The medium was poured into 3-4 petri plates and *K. pneumoniae* was added by streaking. The plates were incubated at 37ºC for 24 h. Next the growth of bacteria was checked and results were analyzed.

RESULTS AND DISCUSSION

The results of prevalence of pneumonia are presented in Tables I and II. The presence of "Kushta barasingha" in the agar medium inhibited the growth of *K. pneumoniae*. A total of 217 patients of Pneumonia were treated in last three years in (PIMS) Hospital. Out of these, 184 were females and 33 were males. Highest rate of infection was noted in females as compared to males. The patient findings confirm the idea of Nadkarni (1980) who reported that Kushta is effective against respiratory tract infections.

Table I. Prevalence of Pneumonia in population of Rawalpindi according to sex in last three years

Months	Year 2000			Year 2001			Year 2002		
	Total number of patients	Number of infected females	Number of infected males	Total number of patient	Number of infected females	Number of infected males	Total No of patient	Number of infected females	Number of infected males
Jan	1	1	0	1	1	0	1	1	0
Feb	2	2	0	3	2	1	0	0	0
Mar	1	1	0	3	2	1	1	1	0
Apr	1	1	0	8	5	3	3	2	1
May	2	1	1	4	3	1	3	1	2
Jun	3	2	1	2	1	1	8	5	3
Jul	4	2	0	3	2	1	10	7	3
Aug	0	0	0	5	4	1	3	2	1
Sep	0	0	2	5	3	2	4	3	1
Oct	7	5	2	5	4	1	7	4	3
Nov	2	1	1	3	2	1	3	2	1
Dec	1	1	0	0	0	0	4	2	2
Total	24	17	7	42	29	13	47	30	17

SOURCE:- Government Services hospital Islamabad (Polyclinic); Total 113 Patient of pneumonia were treated in last three years, out of these 76 were females and 37 were males highest rate of K.penumoniae infection was seen in year 2002

Table II. Prevalence of Penumoniae in population of Rawalpindi according to sex in last three years

Months	Year 2000			Year 2001			Year 2002		
	Total number of patients	Number of infected females	Number of infected males	Total number of patient	Number of infected females	Number of infected males	Total No of patient	Number of infected females	Number of infected males
Jan	2	1	1	3	1	2	9	6	3
Feb	3	1	2	1	0	1	5	3	2
Mar	2	1	1	0	0	0	8	8	0
Apr	3	1	2	1	0	1	8	5	3
May	2	1	1	4	4	0	19	17	2
Jun	2	2	0	5	5	0	12	12	0
Jul	8	5	3	5	5	0	8	8	0
Aug	7	5	2	4	4	0	11	9	2
Sep	7	6	1	7	7	0	11	11	0
Oct	4	2	2	4	4	0	6	6	0
Nov	7	5	2	4	4	0	14	14	0
Dec	1	1	0	6	6	0	14	14	0
Total	48	31	17	44	40	4	125	113	12

As the research work was conducted *in vitro* conditions, in which Khusta is dissolved in sorbital but in human body it is taken with honey. So these results only showed resistance *in vitro* but not *in vivo*.

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