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SHORT COMMUNICATION

HYDATIDOSIS--AN EMERGING ZOONOSIS

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ABSTRACT

Hydatidosis or Echinococcosis is caused by a parasitic cestode, *Echinococcus* (Rudolphi, 1807) with a life cycle having sheep and cattles as an intermediate and canines as a definitive host. Humans, if harbor, is the dead end host. It serves as an important zoonosis in areas where there is close association between humans and domestic livestock.

This is a retrospective observative study conferring pathological features of hydatid infection during 2013 in major tertiary care hospitals in Karachi. This seminal study provides regarding infectivity of hydatidosis in Karachi population.

Study revealed increasing prevalence of infection in age group between 21-40 years with similar proportion in male and females. Liver and lungs are the most commonly involved organs whereas kidney, spleen, lower limb, breast and other organs are rarely involved.

Key-words: Echinococcosis, hydatidosis, human population, Karachi.

Hydatidosis is spread worldwide as an emerging zoonotic as well as an economic problem specially under grazing areas where sheep and cattles act as an herbivorous intermediate host while the canines such as dogs and foxes act as definitive host. It is one of the most neglected parasitic disease (da Silva, 2015).

Man if infected acts as a fnal end host. A metacestode larva of *Echinococcus* is an infective agent which is transmitted while continuing its life cycle in intermediate and definitive host. It is the smallest cestode. Eggs are ingested through oral faecal route which enter to intestine where they hatch and onchospheres are carried to the liver and other organs through pulmonary and systemic circulation respectively where they form the cyst. The outer layer of cyst is pericyst from host tissue reaction while inner germinal cyst from parasite which may contain daughter cysts.

Disease is usually asymptomatic or may appear several years after the development of cyst and reaction depends upon size and number of cysts. Anaphylactic shock is caused by rupture of the cyst.

It is a retrospective and surveying study, from Januray 2013 to Decemeber 2013. The data was collected and reviewed from Department of Pathology of different tertiary care hospital (Aga Khan University Hospital and Dow University Hospital) of Karachi, out of total 20,000 registered cases in a year; data was analyzed for the prevailing age, sex and organ specificity in the study period. The data was statistically analyzed by using IBM SPSS 21 to detect any significant difference. It will help to evaluate the present status of disease infecting humans from animal zoonosis.

The data was also analyzed for age wise infection of hydatid cysts in the recorded cases (Table 1). The peak incidence is were recorded in age group between 21-40 years. Chi-square was conducted for statistical analysis.

The data was further analyzed to evaluate the infection rate of the hydatidosis in the both sexes (Table 2). The favorable site for hydatid cyst development was liver (33.3%) followed by lung, kidney, femur, brain, spleen, thigh, thorax, heart and breast (31.1%, 8.9%, 6.7%, 4.4%, 2.2%), respectively (Table 3).

The total count in both sexes with its mean and standard deviation is given below (Table 2).

Hydatid infection or echinococcosis is an apparent zoonotic infection specially in under developed countries, several authors have been working on this emerging disease in different parts of world (Goldsmith *et al*., 1991; Sarkar *et al*., 2017). Its prevalence is increasing particularly in Asia, Africa and America to northern Hemisphere. Sajjadi (2006) reported its presence situation in Middle East, similarly it was reported in Kuwait (Hassounah and Behbehani, 1976). Rao *et al*. (2012) reported that rural areas of India were more exposed to zoonotic diseases as these areas lack proper education and awareness in implementing strict rules regarding the disposal of remains of slaughtered animals.

It has been mostly emphasized for specificity in hosts. Amin *et al.* (2011) observed echinococcosis in buffaloes in Iran. In Pakistan studies were conducted by Baig *et al.,* (1986) and Maqbool *et al*. (1994) reporting its infection in dogs. Furthermore in Punjab (Khan and Haseeb, 1984) reported its prevalence in livestock ranged from 5-46%.

This disease has been neglected in Pakistan for its presence in humans and only selected work has been done. The study will help to understand incidence in Karachi and its related areas so that efforts could be made to reduce its increasing prevalence. It has been observed that gender has no mark difference on susceptibility, the age group between 21 to 40 years is more inclined to infection probably due to avoiding hygienic conditions or contact with dogs and other reservoir live stocks that helps in continuing the cestode life cycle. Gadahi *et al*. (2011) reported human hydatidosis from Hyderabad.

The methods for eradication of this potentially hazardous infection has not yet been initiated well but it may be reduced by increasing awareness for proper hygiene, slaughter conditions, improving dog control and health education etc. Shafik (2003) reported about 4% of its awareness rate in Punjab. The aim of this analysis is a serious conversation of factors truly or potentially contributing to determine emergence of echinococcosis in humans.

Table 1. Prevalence of hydatid disease in both genders according to age group.

Age_Groups	< 20 Years	12	26.7%
	21-40 Years	20	44.4
	41-60 years	12	26.7
	> 60 Years	1	2.2

		Age_Groups
Gender	Chi-square	6.114
	Df	3
	Sig.	0.106[a,b]

Table 2. Showing the total count in both the sexes.

Gender	N	Mean	Std. Deviation	Std. Error Mean
Female	22	36.3364	18.02309	3.84254
Male	23	24.6957	12.19700	2.54325

Table 3. Prevalence of hydatid disease in different organs

		Count	Percentage
Site of cyst	Brain	2	4.4
	Breast	1	2.2
	Cyst	1	2.2
	Femur	3	6.7
	Heart	1	2.2
	Kidney	4	8.9
	Liver	15	33.3
	Lung	14	31.1
	Pancreas	1	2.2
	Spleen	1	2.2
	Thorax	1	2.2
	Tibia	1	2.2

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