

Current Status of Tuberculosis in Human Reported to Liaquat Memorial Hospital and District Headquarter Hospital Kohat ,KPK, Pakistan

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ABSTRACT. A total of 132 samples were tested in which 47 (35.60%) were positive. A High prevalence was recorded in month of June and July 19(47.5%), 5(41.6%) in LMH hospital kohat respectively and lowest was recorded in month of June and July 12(24%), 11(36.6%) in DHQ hospital kohat. Age wise prevalence was determined in which high prevalence was recorded 45.83% (48/22) in age ranges above 40 year and followed by 30.61 (49/15) age ranges from 21 to-40 years and lowest was recorded 28.57 (35/10) in the ages range from 10-20years. Similarly, Sex wise prevalence was determined in which high prevalence was recorded in female 37.5(72/27) then male 33.33(60/20).

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1.0 Introduction

Pulmonary Tuberculosis is a chronic infectious disease caused by *Mycobacterium tuberculosis*, is characterized by prolonged cough, hemoptysis, chest pain and dyspnea. Systemic manifestations of the disease include fever, malaise, anorexia, weight loss, weakness and night sweats (Hopewell, 1997) Tuberculosis (TB) remains a well known health problem in the world, with an estimated 8 million new cases annually, of which about 3.5 million cases (44%) have infectious pulmonary disease (WHO, 1997; Dye, *et al.*1999) The world fatality rate is 23% and is .50% in some African countries with high HIV rates (Dye, *et al.*1999) Tuberculosis (TB) remains a serious threat to public health in developing countries (Khalilzadeh, *et al.* 2006; Ayaz *et al.*, 2012)

Prevalence and economic status depending on the investigation for pulmonary TB differs between countries. In patients from a country with a high prevalence of pulmonary TB and a high clinical suspicion, anti-TB treatment is often initiated without further investigations, even in patients with negative sputum smears (Muhan, *et al.* 1995)

The diagnosis of probable pulmonary TB needs a positive nucleic acid amplification test result or a positive smear and radiological findings suggestive of pulmonary TB (Brondli, *et al.* 2003) Tuberculosis occurs in both sexes, in all age groups and can affect virtually all organs of the body (Noertjojo, *et al.* 2002) IT has a wide spectrum of

clinical presentation Depending upon the anatomical site involved Environmental characteristics such as crowding and social factors, including poverty and imprisonment, are associated with increased risk of tuberculosis. (Lienhardt, 2001; Phillips, *et al.* 2004; Lee, *et al.* 2008)

Tuberculosis is one the major infectious disease with predominant involvement of lung and lymph nodes but tuberculosis of the middle ear is uncommon (Mahajan, *et al.* 1995) It is one of the most common infectious diseases of developing countries including Nepal (Baskota and Sinha, 1998) The present study was design to determine the current status of Tuberculosis in hospitalized patient of DHQ Hospital and LMH Hospital Kohat.

2.0. Materials and Methods

2.1. Study Area

The study was carried out in area of Kohat(DHQ and LMH hospital).A questionnaire was prepared to collect the desire data about the Tb patients who's came to DHQ and LMH hospital KOHAT (KPK) having the detail of their date of registration, name, sex , age, weight , location , date , any medication and test perform by patient.

2.2. Sample collection

A total of 132 sputum samples were collected directly from the patient in clean and sterile sputum container and were labeled properly i e sex, age and date. The samples were randomly collected from the male and female patient during the period from June and July, 2010. The samples were transported to

the molecular parasitological lab, of zoology for further investigation

2.3. Microscopic examination

The slides were prepared under a standard protocol, stain and then examined under the microscope at magnification of 10x, 40x and 100x.

2.4. Slides preparation

1. Slide is label first with stylus or lead pencil
2. Fish out the yellowish portion from sputum container and place on slide with rough end of the strick.
3. Spread material evenly on slide in an approximate area of 2cmx1cm so that news print is readable on drying.
4. Air dry smear completely and then heat fix smear in a flame.

2.5. Zhel Nelson staining.

- 1 Place slides on the staining box having carbol Fuchsin for 5-10 minutes.
2. Give a heat through a spirit lamp for fixing.
3. Remove the slides and make them air dry.
4. Put a few drops of decolorizing agent as per protocol.
5. Wash the with simples tape water.
6. Again dip the slide in 2nd box having methylene blue for 5-10 minutes.
7. Remove the slides and make them air dry and washed.
8. View the smear under oil immersion.
9. See the slides under microscope at 10x, 40x and 100x and identified with the standard images, those slides having fine, red rods against the blue background. The red rods show the presence of Mycobacterium (TB) positive.

2.6. Prevalence rate.

The prevalence rate of the was determined on the following formula

$$= \frac{\text{No. of patients having TB positive}}{\text{Prevalence rate}} \times 100$$

Total no. of patients

2.7. Statistical analysis.

The data was analyzed by using the chi square test and univariate ANOVA.

3.0 Results and Discussion

Tuberculosis (TB) remains a leading health problem in the world, with an estimated 8 million new cases annually, of whom about 3.5 million cases (44%) have infectious (smear positive) pulmonary disease (WHO, 1997; Dye, *et al.* .1999) Tuberculosis (TB) remains a serious threat to public health in developing countries (Khalilzadeh, *et al.* 2006) In the present study, a total of 132 sample were tested in which 47 (35.60%) were positive, A high prevalence

was recorded 16(38.09%) in month of July, and the lowest 31(34.44%). was recorded in months of June, 2010 .similar study was conducted to diagnose the TB which based on a positive sputum smear is reported in 22–50% of patients with culture-positive pulmonary tuberculosis. The 32.02% diagnostic rate of sputum smear in the current study as same range as reported in literature(Dye, *et al.*1999; Centis, *et al.*2002; Valadas, *et al.* 2003) Several studies have carried out which based on sputum with bronchoscopy for the diagnosis of pulmonary TB. Induced sputum is reported to produce a positive smear result in 22–64% of patients with suspected pulmonary TB who do not produce sputum or who have smear-negative spontaneous sputum (Parry, *et al.* 1995; Al Zahrani, *et al.* 2001)

In the present study, sex wise prevalence was determined in which high prevalence was recorded in female 37.5% (27/72) then male 33.33%(20/60). A similar report was reflected in 2008 by shafi ullah that a High female preponderance was noted with a M:F ratio of 1:2. Mean age was 35 years and 70% of the patients were in the age group 15–45 years. (Shafi Ullah, *et al.* 2008)

The investigation for pulmonary TB differs between countries, depending on the prevalence and economic status. In patients from a country with a high prevalence of pulmonary TB and a high clinical suspicion, anti-TB treatment is often initiated without further investigations, even in patients with negative sputum smears (Mohan, *et al.*1995)

The limitations of the current study are the nature and the unavailability of induced sputum. The value of induced sputum for sputum smear-negative tuberculosis is the burning issues (Anderson, *et al.*1995; Conde, *et al.* 2000; Al Zehrani, *et al.*2001). Therefore, the current findings support that combining bronchoalveolar savage fluid is more effective for diagnosis of pulmonary tuberculosis in patients who are sputum smear negative or have no sputum production at all.

4.0. Conclusions

It was concluded that Pulmonary TB is the most common prevailing disease in the rural communities in Kohat and high incidence was recorded more in female as compare to male.

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Table 1. Prevalence of tuberculosis in Kohat, KPK, Pakistan

S.No	Month	D.H.Q Sample tested	Positive	%age	L.M.H Sample tested	Positive	%age	Total
01	June	50	12	24	40	19	47.5	34.44%
02	July	30	11	36.6	12	5	41.6	38.09%
Grand Total.		80	23	28.75	52	24	46.15	35.60

Table 2. Age wise prevalence of tuberculosis in kohat, KPK, Pakistan

S.No	Age Groups	Sample tested	Positive	%age
01	10-20	35	10	28.57
02	21-40	49	15	30.61
03	Above40	48	22	45.83
Grand Total.		132	47	35.60

Table 3. Sex wise prevalence of Tuberculosis in Kohat, KPK, Pakistan

S.No	Sex	Sample tested	Positive	%age
01	Male	60	20	33.33
02	Female	72	27	37.5
Grant total.		132	47	35.60

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