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A RESEARCH STUDY TO KNOW THE CONSEQUENCES CURE OF TB PATIENTS WHO WERE PRESENT IN DEPARTMENT OF PULMONOLOGY, MAYO HOSPITAL LAHORE

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Abstract:
Background: *The consequences of cure of TB designate the efficiency of treatment.*
Objective: The study was organized to know the consequences cure of TB patients who were present in Mayo Hospital Lahore.
Patients and Methods: *The study was organized at the DOTS hospital. The department selected was Mayo Hospital Lahore. The duration of the study was from 1st February, 2017 to 31st January, 2019. The patients were noticed completely until they were completely healthy. The patients were divided into various classes on different basis. Patients were classified on the basis of history of management and sputum smudge position.*
Results: *Total 1607 patients were recorded in the clinic. Most of the patients were identified at an early stage. The average ages of the patients were 30 years. Most of the patients were identified to have pulmonary TB. 77% patients were completely healthy from the disease. Newly admitted patients charged well as compare to earlier patients. In earlier cases the treatment consequences achieved were as pursued: deterioration 62.7%, cure after evasion 52.7% and unsuccessful treatment about 33.3%. The pulmonary patients charged well as compare to extra pulmonary TB. The comparison between them was 87.7% and 72.5%, mortalities 11% and 3.2%, unsuccessful rate 1.9% and 0.2% and evasion rate 6.9% and 10.6% correspondingly.*
Conclusion: *The successful rate of treatment was determined on the basis of WHO standardization. 85% cases were noticed. The most of the successful cases were those who were admitted in the hospital later on. Earlier revelation to anti TB drugs management especially insufficient was closely connected with meager consequences.*
Keywords: *Tuberculosis, Treatment Outcome, Treatment Completed, Cured, Relapse, Defaulter.*

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INTRODUCTION:

Tuberculosis is a well-known transmissible infection. It is present all over the world. On international scale many efforts were made to cure and removed this disorder. Tuberculosis is spread to about one third of the overall inhabitants of the world. 8 million individuals are affected by the tuberculosis each year. In mounting countries about 90% cases and mortalities were identified about TB. Pakistan is categorized on the 6TH number in the rank of over populated countries. Pakistan has 231/100000 chances. [1] The most persuasive foundation of disease was the sufferer suffering from sputum smear-positive patients. They have less successful consequences. In mounting countries two-third of the total patients died in two or three years. [2] That's why cure of famous case of tuberculosis especially pulmonary TB is the foundation of all TB management policies. [3] In a successful cure individual become completely healthy and prevents the prevalence of infection to other individuals. An effective treatment also checks the drug confrontation Mycobacterium Tuberculosis. [4] Keeping in view these particulars, efforts has been made on international level to make certain liberation of efficient, standardized cure for all TB patients. DOTS was organized as TB control programme under the directions of WHO. [5] In 2001 DOTS was suggested by Pakistani government. And in 2005 all the amenities and exposure were achieved by Pakistan. [6] From that time Mayo Hospital Lahore is administrating this project. The efficiency TB control programme can be recognized by the consequences of the cure. The main purpose of the study was to determine the consequences of tuberculosis at Sheikh Zayed Medical College / Hospital, Rahim Yar Khan.

PATIENTS AND METHODS:

The patients who were identified as tuberculosis patients by microscopy, civilization, histopathology or medical assessment by a knowledgeable clinician with the resolution to cure with complete track of anti-tuberculosis drugs schedule were tagged as tuberculosis patient and indexed in DOTS programme at Department of Pulmonology, Mayo Hospital Lahore. The duration of the study was from 1st February, 2017 to 31st January, 2019. The tuberculosis mainly affecting the lungs was termed as pulmonary tuberculosis. The attack of tuberculosis on any part of the body organ except lungs was termed as extra pulmonary tuberculosis. Patients were divided into various categories on the basis of their treatment in earlier narration. The various characters of the individuals including sexual status, age duration, location of infection, categories of patients and sputum smear status were noticed entirely.

TABLE 1: Type of TB Patients

New case	A patient who has never had treatment for TB or has taken Anti-TB drugs for less than 1 month and not recorded with the program
Relapse	A patient previously treated for TB declared cured or treatment completed by the program, becomes sputum smear or culture positive any time
Transferred In	A patient who has been transferred from another TB register to continue treatment
Treatment Failure	A patient who is started on a retreatment regimen after having failed previous treatment
Return after default	A patient who returns to treatment, bacteriological positive, following interruption of treatment for 02 or more consecutive months.
Other	All cases that do not fit the above definition, such as patient who were previously treated but for whom the outcome of their previous treatment is unknown, and patient who have re turned to treatment with smear negative pulmonary TB or extra-pulmonary TB or extra-pulmonary TB, taken TB drugs for more than 04 weeks from outside the programme.

The patients were selected from Department of Pulmonary, Sheikh Zayed Medical College/ Hospital, Rahim Yar Khan. Total 316244 patients living in Mayo Hospital Lahore and surrounding areas were noticed in the study. It was a tertiary care centre. It was the main hospital in district Mayo Hospital Lahore and surrounding districts of Punjab, Sindh and Baluchistan. Patients who were beyond the limitations of DOTS catchment of Mayo Hospital Lahore were submitted to apprehensive DOTS treatment centre for muster and management after compulsory valuation and identification. Therefore, only the persons of Mayo Hospital Lahore and surrounding areas were added in the studies that were present in the hospital. Patients cured outside the DOTS program were not added in the study.

The patients were followed up until they were completely healthy. Maximum 6 to 8 months were needed to completely cure the patients.

WHO suggestions were used for the consequences of treatment. This guidance was also accepted by National TB Control Program Pakistan. [7] The consequences of treatment were also identified by the age, sexual status, location of infection and type of disorder of the patients. SPSS version 15 was used to identify the data.

TABLE 2: Treatment outcome

Cured	A patient registered as smear – positive, has completed the duration of treatment, and becomes sputum smear negative at the end of treatment and on at least one previous occasion.
Treatment completed	A smear positive patient who has completed the duration of treatment and have at least one follow up smear negative results but none at the end of treatment due to any reason smear negative and extra pulmonary cases complete six months of treatment successfully. Treatment
Treatment failure	A sputum smear positive patient who remains or becomes sputum smear positive at month five or later also a patient who was initially smear negative before starting treatment and became smear positive after completing the initial phase of treatment.
Died	A patient who dies for any reason during the course of treatment.
Default	A patient whose treatment was interrupted for two consecutive months after registration.
Transferred out	A patient who has been transferred to another recording and reporting unit for whom treatment outcome is not known.
Treatment Success	It is sum of patient who are declared cured and treated completed.

RESULTS:

In the previous table the various characters of the patients including age, sexual status, sputum smear status and category of patients was observed every year. The disease was more likely to present in males than females. The average age of the patients was about 30 years. In 74.9% patients pulmonary TB was identified. Most of the patients were those who were identified newly. 80.4% cases were sputum smear in between the pulmonary tuberculosis. Consequences of treatment in each year were shown in table 4.

All the patients who were treated and completely cured were called as treatment success. The rate of success was 77%. This success rate was less than the suggestions given by WHO which was 85%. The consequences of treatment in men and women were shown in the table 5. Unsuccessful treatment rate was greater in men as compare to the value suggested by WHO. Other results were similar to the WHO criteria. Consequences of treatment were different in various types of patients as presented in table 6. Most appropriate consequences were shown in new patients in whom success rate was about 80.6%. However, after failure treatment patients charged badly. The consequences of Pulmonary and extra pulmonary TB were shown in table 7.

TABLE 3: Characteristics of subjects

Total patients	**2008**		**2009**		**Total**
	705		992		n=1607
	Total	%	Total	%	n = 1607
Male	394	55.9	459	50.9	853
Female	311	44.1	443	49.1	754
Disease Classification					
Pulmonary	535	75.9	668	74.1	1203
Extra pulmonary	170	24.1	243	25.9	404
Type of patients					
New	604	85.7	744	82.5	1348
Previously Treated	101	14.3	158	17.5	259
Relapse	45	6.4	65	7.2	110
Defaulter	17	2.4	59	6.5	76
Failure	4	0.6	8	0.9	12
Others	35	5.0	26	2.9	61
Sputum for Smear					
Positive	433	61.4	534	59.2	967
No AFB	102	14.5	134	14.9	236
Not Applicable	170	24.1	234	25.9	404

TABLE 4: Overall treatment outcome

Treatment Outcome	**Pulmonary**	**Extra pulmonary**	**Total**
Treatment Success **-Cured** **-Treatment Completed**	885 -520 -365	352 -00 -352	1237 -520 -717
Died	132	13	145
Failure	23	1	24
Defaulter	127	28	155
Transferred Out	36	10	46

TABLE 5: Treatment outcome by sex

Treatment Outcome	**Total patients n = 1607**	**Male n = 853**	**Female n = 754**
Treatment Success	1237	642	595
Died	145	73	72
Failure	24	13	11
Defaulter	155	98	57
Transferred Out	46	27	19

TABLE 6: Treatment outcome by type

Treatment Outcome	**New**	**Relapse**	**Transfer**	**Other**	**Treatment after Defaulter**	**Treatment after Failure**
Treatment Success **-Cured** **-Treatment Completed**	1087 -423 -664	69 -46 -23	2 -2 -0	35 -17 -18	40 -29 -11	4 -3 -1
Died	94	14	0	13	22	2
Failure	11	8	0	1	2	2
Defaulter	122	13	1	7	9	3
Transferred Out	34	6	0	2	3	1

TABLE 7: Treatment outcome by disease classification

Treatment Outcome	Pulmonary n = 1203	Extra pulmonary n = 404	Total n = 1607
Treatment Success **-Cured** **-Treatment Completed**	885 -520 -365	352 -00 -352	1237 -520 -717
Died	132	13	145
Failure	23	1	24
Defaulter	127	28	155
Transferred Out	36	10	46

DISCUSSION:

The first study about TB patients was conducted at Mayo Hospital Lahore Hospital. The consequences of the treatment were recorded as given by WHO. The consequences of the study were analyzed by other studies of different cities and also on international level. The victory of TB management programme can be determined by the consequences of cure. Various inspections are also organized to determine the complete presentation. Local examinations are also significant as they also provide basic information about the results of the programme.

The success rate was recorded 77% in our observations. This was less than the criteria of WHO which was 85%. However, the results of the cure of the patients who come into the hospital from other clinics were less and about 9% mortality was also observed in those patients. If we removed the out patients from the study the success rate enhanced to about 88.9%. This success rate was greater than the criteria of WHO. The studies about this problem were also carried out in England and Wales in 2007. The success rate in those countries was about 62%. It was concluded that the achievement rate was much smaller in those studies because of absence of some records and greater numbers of mortalities. [8] Another study was also conducted in England and Wales in which the main focus was on children. The study was carried out in the supervision of Abu-Bakr and his companions. [9] In this study the achievement rate was about 88%. National TB Control Programme registered about 349694 cases in the years 2006 and 2007. It was noticed that out of these patient's majority of the patients about 309154 were cured effectively without any complications. [10] The best consequences of the treatment were examined in the Peshawar hospital in 2007. The achievement results were 99.4%. These results were greater than the criteria of W.H.O. [12] Local study was also important to identify the variations in the above-mentioned results.

Three quarter of the cases were identified pulmonary TB. These patients which were suffering from pulmonary TB are the most common cause of prevalence of the disease in other individuals. Identification of the infection at early stage and suitable handling. [13] It has been cleared from the reports of the study that more achievement rates were examined in extra pulmonary tuberculosis which was about 87.1%. In pulmonary tuberculosis the achievement rates were less because of some mortalities, unsuccessful cure and debtors.

It was observed that new coming cases charged well than the older ones and their achievement rate was also greater. The achievement rate of the new cases was about 80.6%. The achievement rates of the older cases were about 53.7%. These were categorized into smaller classes and their results were 62.7% for deterioration cases, 52.7% for cure after evasion and 33.3% for unsuccessful cure. So it is necessary to pay more attention to the recent patients to avoid the retreatment.

10% were those types of patients who cannot continue their treatment till end. The basic reason was bad handling of these cases. It has been noticed that in our experimentation 38.2% patients were healthy completely, 14.5% completed their treatment, 28.9% deaths and 2.8% unsuccessful cure was observed. Unluckily, again evasion was seen in 11.8% cases. The TB control programme was supposed to be unsuccessful because of greater evasion rates. Many patients stop getting treatment when they don't feel any advantage from the treatment. [13] To find out the non-observance of patients in a particular area more studies were needed to carry out. We can achieve betterment in TB control programme by tackling these reasons and following non enthusiast patients. [14]

9% death rate was observed in this study which was quit high rate. To determine the causes of greater numbers of deaths more observations were needed to carry out. The total achievement rate was also affected by the 46 indefinite percentages of outsider's patients. These types of complications were identified mostly in tertiary care centers. There should be better connection

of the investigators with the various hospitals to get the complete information about the cases. The achievement results were not significant. Because there are large number of patients of tuberculosis who get treated by private clinics. In the department of Pulmonology there are better facilities of trained staff, free supply of medicines and system to follow the debtor still the achievement rate was 77% less than the recommendations of W.H.O. Patients treated in confidential sectors face the dangers of drug confrontation and bad treatment consequences.

CONCLUSION:

The achievement rate of the overall studies was less than the criteria given by W.H.O. The patients with older history of TB showed less achievement rates. Various points were suggested to better the achievement rates. These were as follows: All the patients should be enrolled and treated betterly. Constant supervision of cure results is guaranteed to determine the efficiency of TB control programme. Incomplete treatment should be identified by further studies. Following of non-enthusiast patients by health care personnel can further improve conclusion.

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