Economics Of Tuberculosis Treatment

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Abstract

A study was carried out to assess the financial burden on an average adult patient with tuberculosis. This investigation included 30 patients belonging to poor to lower middle class. Average per capita income ranged between Rs. 120 to 5000 with an average of Rs. 827. Housing conditions were also inadequate i.e. average 3.8 residents per room. The average total expenditure of a TB patient (including procedures and admissions) was Rs. 13851 (the range being 6780 to 95730). The average cost of Anti TB drugs (full course) is Rs. 3408.30. Travelling cost was Rs. 636.67 on average, range being Rs. 200 to Rs. 1500. The average investigation cost before diagnosis was Rs. 892, and after diagnosis Rs. 561.8 Consultation cost before diagnosis was Rs. 494.70 and after diagnosis, Rs. 2250 (total days off work have not been included in the patients expenses.)

Introduction

Tuberculosis (TB) is considered to be major cause of ill health. Based on Burden of disease estimates, TB represents 5% of the total DALYs (disability adjusted life years), which indicated that the burden of TB in Pakistan, is substantially higher than the world average of 3%. Approximately 26% of deaths from treatable caused among adults in Pakistan are due to TB since most of these cases are under 45 years of age. The socioeconomic impact of the illness is substantial of the 20 million cases of TB world wide, 2 million are in Pakistan. About 95% of the TB cases and 98% of the TB deaths are in developing countries.

In this study the economic burden on a TB patient was calculated for the whole course of eight months. The cost of the days off work and additional nutritional requirement were not possible to calculate, so the actual cost of TB treatment may be much higher than calculated in this study. Further studies conducted in other parts of the country, may give a more generalized idea.

Objective

To calculate the cost of tuberculosis treatment in a tertiary care hospital.

Material And Methods

Thirty adult patients, diagnosed as tuberculosis on the basis of sputum smear or histo-pathology report were included. They were selected by purposive sampling. Patients coming to OPD for follow up were assessed using a proforma in a single sitting (see appendix 1). Cost was calculated under the heads of ATT, Investigations before and after diagnosis, Consultations before and after diagnosis, Travelling, Other medications (other than ATT), admissions and procedures and days off work was noted. The actual cost of days off work was not included in the total cost.

The average cost of the treatment was assessed using excel sheet using the mean value for the calculation.

Results

Average age of patients was 29 years. Twelve were male and eighteen were female. Out of 30 twelve were house wives eight labourers. Other professions included students, Govt. Servants retired persons and shopkeepers. Our subjects belonged to low socioeconomic class with mean per capita income of rupees 827. Only five patients fall in the category of more than 1000 per capital income 3.8 residents were living in one room which also shows their economic class.

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A) COST OF ATT: On an average the cost of ATT for the month course is Rupees 3408.

B) COST OF INVESTIGATIONS: Expenditure was calculated under the heads of X-Rays, CP, ESR, Sputum for AFB, Culture, LFT. and other tests if any.
   a) Cost of investigation before diagnosis was Rs. 892.00
   b) Cost of investigation after diagnosis was Rs. 561.00

C) COST OF CONSULTATION:
   a) Cost of consultation before diagnosis Rs. 892.00
   b) Cost of consultation after diagnosis Rs. 2250.00
      (for the whole course of treatment)

D) COST OF TREATMENT:
   a) Before diagnosis Rs. 440.00
   b) After diagnosis Rs. 215.00

E) COST OF TRAVELLING:
   a) The usual mode of transport was bus, motorcycle, taxi and car.
      The average travelling cost was Rs.215.00

F) COST OF ADMISSION AND PROCEDURES:
   9 out of 30 patients were admitted out of which 6 under went different procedures. Chest tube intubations were 3, thoracotomy 2, laparotomy 1. The other 3 were admitted because of general ill health. In total Rs.158,000.00 were spent on these 9 patients. The average cost incurred was Rs. 17555.00

G) DAYS OF WORK:
   Total day of work were 216. The cost of these were not included in the total cost.

   NET EXPENSES:
   Before diagnosis Rs. 1562.00
   After diagnosis Rs. 6378.00
   Net cost of TB patient without admission and procedures Rs.8,584.00
   Net cost of TB patient with admission and procedures (9 patients) Rs. 26,136.00

Conclusion

It is quite clear from our study that total cost of ATT is less than half of the total cost of TB treatment. If we include the admissions and procedures, then the average cost is Rs. 26,139.00 (9 patients). This study shows that one has to spend more than Rs. 1000 per month just for the TB treatment. A lot of money is spent on investigations and unnecessary medicines before and after diagnosis of TB. Plus the consultation fee adds to the cost.

Recommendations

Our aim should be to provide care at the minimum cost so as to improve the patient’s compliance. This can be achieved if
   a) The patients are diagnosed early.
   b) Diagnosis and treatment is based on TB guidelines, and
   c) Unnecessary investigations and medicines are avoided.

APPENDIX 1
TB ECONMICS QUESTIONNAIRE

Name __________________________ Age ________ Sex _______ Weight ________
Address _________________________ Size of ______ House (rooms) ________
No. of Residents ________________ Total Income of house holds __________________
Existing Illnesses ____________________________ __________________________
Type of Tuberculosis / Category ____________________________ __________________________
Q.1 Are you taking ATT N Y Duration (Weeks) ____________
Q.2 What investigation have been done:
<table>
<thead>
<tr>
<th>Test</th>
<th>Before Diagnosis</th>
<th>After Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>X-ray</td>
<td>NY</td>
<td>NY</td>
</tr>
<tr>
<td>C.P.</td>
<td>NY</td>
<td>NY</td>
</tr>
<tr>
<td>E.S.R.</td>
<td>NY</td>
<td>NY</td>
</tr>
<tr>
<td>Sputum</td>
<td>NY</td>
<td>NY</td>
</tr>
<tr>
<td>AFB Smear</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Others 1

| Others 2          | NY               | NY              |
| Others 3          | NY               | NY              |

Q.3 Did you see any doctor for your treatment?

<table>
<thead>
<tr>
<th>Before Diagnosis (visits)</th>
<th>After Diagnosis (visits)</th>
</tr>
</thead>
<tbody>
<tr>
<td>G.P. Speacial others</td>
<td>G.P. Speacial others</td>
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</tbody>
</table>

Q.4 Travel to seek medical help Distance in Kilometres

<table>
<thead>
<tr>
<th>No. of visits</th>
<th>Mode of Tranports</th>
</tr>
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</table>

Q.5 Did you take any medicine for any other reason (other ten ATT. include Vit) ?

| Before Diagnosis | NY | | |
| After Diagnosis  | NY | | |

Q.6 Had you been off work for treatment or consultation?

| NY | No. of Days | |

Q.7 Were you being paid for your off day? NY

Q.8 Did you have to pay anything other than above for your TB treatment or concerning that?

| NY | meluding non conventional treatment etc. |
| How much did you pay? |

Q.9 Admission to Hospital NY

| Procedures | Charges |
|           |        |
References


