An experience with epidemiological outbreak of Kala-azar in a rural area of Bangladesh

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Kala-azar, a parasitic disease caused by *Leishmania donovani* was first recognized in India in 1903.

Now Kala-azar is endemic in our country specially their prevalence is more in

- Tangail
- Gazipur,
- Sirajganj,
- greater Mymensingh,
- Panchoghar and
- Northern part of our country.
Here we share an acute outbreak of Kala-azar in a small village name Dararhat in Panchaghar district.
Methods
Methods

We, a 3 member team from disease control unit of DG health, Dhaka went to help local authority of Debignonj Thana health complex.

Arranged 2 meetings with the UNO, Upozilla Chairman and other officers, News reporters and All health personnel of that health complex.
After that we arranged *two health camps* in a community clinic for two consecutive days.

People with the history of

- fever for more than 15 days
- left sided upper abdominal mass and
- past history of kala-azar

Were requested by Health Inspector, Health assistant, Mosque Imam, Union parishad member and local political leaders to come to the community clinic of that particular village.
After screening, suspected cases were requested to attend Debigonj Upazilla health complex, here we again took

- history with
- clinical examination, and
- rK-39 test was done in all the cases.
Epidemiological Investigation of Kala-azar outbreak

Data Collection Sheet
Debigonj, Panchagarh

1. Name: ____________________________
2. Age: ____________________________
3. Sex: ____________________________
   M  F
4. Religion: ____________________________
   Islam  Hindu  Christian  Budhyst  Others

5. Marital status: ____________________________
   1. Married  2. Unmarried  3. Others

6. Address with contact number: ____________________________

7. Occupation: ____________________________

8. Hospital Registration no: ____________________________

9. Date of admission: ____________________________

10. Date of recording: ____________________________

11. Personal & Family Information:
   11.1. Occupation of Father: ____________________________
   11.2. Occupation of Mother: ____________________________
   11.3. Number of Family members: ____________________________
   11.4. Number of Siblings of the subject: ____________________________

12. Level of education of subjects: ____________________________
   Year of schooling: ____________________________ years

13. Mother’s year of schooling: ____________________________ years
14. Father’s year of schooling: ____________________________ years

15. Any Kala azar campaign education: ____________________________ Yes/No

16. Income: Monthly Family Income:
   1. < 2000 tk
   2. 2001-4000 tk
   3. > 4000 tk

17. Residence & housing:
   17.1 Number of living room in your house: 1/2/3/4
   17.2. Residence in Kala azar area: ____________________________ Yes/No

17.5. Roof of house: ____________________________

17.6. Average number of regular persons living your room: ____________________________ Yes/No

17.7. Sanitary latrine use: ____________________________

17.8. Main source of drinking water: ____________________________ Tubewell Yes/ No

18. Living of Subject:
   18.1. Living on the floor: ____________________________ Yes/ No
       If live in the floor then:
   18.2. The floor is Katcha: ____________________________ Yes/ No
   18.3. Nature of bed preparation on floor:
   18.4. Presence of cracks & crevices in wall: ____________________________ Yes/ No
   18.5. Using mosquito net: ____________________________ Yes/ No
       Season: ____________________________ Yes/ No
       Always uses  Uses sometimes  Uses never
       Summer  ____________________________
       Rainy season  ____________________________
       Winter  ____________________________

18.7. Presence of natural light inside living room: ____________________________ Yes/ No

18.8. Presence of granary within 50 meter of living house: ____________________________ Yes/ No

18.9. Presence of vegetation within 50 meter of living house: ____________________________ Yes/ No

18.10. Presence of banana tree within 50 meter of living house: ____________________________ Yes/ No

18.11. Presence of bamboo tree within 50 meter of living house: ____________________________ Yes/ No

18.13. Has cattle in family: ____________________________ Yes/ No

Animals: ____________________________
   Yes  No
   1. Goats  2
   2. Chickens  1  2
   3. Cow  1  2

ID no: ____________________________

Pati  Chat  Katha  Mattres  Others
Suspected Kala-azar:

Patients with

- fever of more than two weeks
- from an endemic area who
  - has splenomegaly
  - with or without anemia and
  - weight loss.
Kala-azar (KA):

- An individual in an endemic area
- Fever for more than 2 weeks with splenomegaly and
- ‘rK-39’ test is positive should be diagnosed as a case of Kala-azar.
Kala-azar Treatment Failure (KATF):

- Diagnosed case of Kala-azar, Took complete treatment within one year
- Reappearance of symptoms of Kala-azar and
- Any positive lab evidence of parasite from Bone Marrow or Splenic aspirate.
PKDL:

- Multiple hypo-pigmented areas on skin without loss of sensation
- With any one or combination of macule, papule and nodule in a patient with history of Kala azar
- With high index of suspicion based on residing/travelling in endemic area and rK-39 test positive.
Results
Around 700 people attended the health camp for two days.

51 cases were suspected to have either Kala-Azar or related problems.

All cases were from kala-azar prevalent area.
Sex distribution

<table>
<thead>
<tr>
<th>Total number of cases</th>
<th>n=42</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>33</td>
</tr>
<tr>
<td>Female</td>
<td>09</td>
</tr>
<tr>
<td>Male : Female</td>
<td>3.67 : 01</td>
</tr>
</tbody>
</table>
## Age Distribution

<table>
<thead>
<tr>
<th>Age</th>
<th>No of Cases</th>
<th>No of subject</th>
<th>No of cases (rk39 +ve)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 10</td>
<td>13</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>11 - 20</td>
<td>8</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>21-30</td>
<td>17</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>31-40</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>41-50</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>&gt;50</td>
<td>4</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>
# Occupation

<table>
<thead>
<tr>
<th>Occupation</th>
<th>No of cases (n=42)</th>
</tr>
</thead>
<tbody>
<tr>
<td>House wife</td>
<td>06</td>
</tr>
<tr>
<td>Day laborer</td>
<td>08</td>
</tr>
<tr>
<td>Farmer</td>
<td>07</td>
</tr>
<tr>
<td>Student</td>
<td>09</td>
</tr>
<tr>
<td>Dependent</td>
<td>10</td>
</tr>
<tr>
<td>Others</td>
<td>02</td>
</tr>
</tbody>
</table>
Where does the disease occur?
Residence and Housing

- Nature of wall of their houses was kacha, floors were made of clay and roof of the houses were tin shed, 43% cases live in single living room and 31% cases live in two rooms.

- 31 cases had cracks and crevices in their house wall.
- 45% among them did not use sanitary latrine.
Out of 42 number 38 use mosquito net and 4 do not use

And out of 38, 24 person always use mosquito net and 14 use occasionally
Nearest distance of known case of kala azar

<table>
<thead>
<tr>
<th>Distance</th>
<th>Cases (n=42)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within household</td>
<td>23</td>
</tr>
<tr>
<td>&lt;100 meter</td>
<td>08</td>
</tr>
<tr>
<td>&gt;100 meter</td>
<td>11</td>
</tr>
</tbody>
</table>
No. of cases receiving kala azar treatment in living family members:

<table>
<thead>
<tr>
<th>Family member</th>
<th>No of cases (n=42)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>19</td>
<td>45</td>
</tr>
<tr>
<td>1</td>
<td>15</td>
<td>36</td>
</tr>
<tr>
<td>2</td>
<td>06</td>
<td>14</td>
</tr>
<tr>
<td>3</td>
<td>02</td>
<td>5</td>
</tr>
</tbody>
</table>
## Clinical features

<table>
<thead>
<tr>
<th>Clinical presentation</th>
<th>No of cases (n=42)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fever</td>
<td>31</td>
<td>74</td>
</tr>
<tr>
<td>Splenomegaly</td>
<td>19</td>
<td>45</td>
</tr>
<tr>
<td>Hepatosplenomegaly</td>
<td>8</td>
<td>19</td>
</tr>
<tr>
<td>Maculo-papular skin lesion</td>
<td>13</td>
<td>31</td>
</tr>
<tr>
<td>Previous history of kala azar</td>
<td>21</td>
<td>50</td>
</tr>
<tr>
<td>Anemia (+/++/+++</td>
<td>37</td>
<td>88</td>
</tr>
<tr>
<td>Final diagnosis</td>
<td>No. of cases (n=42)</td>
<td>%</td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>---------------------</td>
<td>----</td>
</tr>
<tr>
<td>Kala-azar</td>
<td>21</td>
<td>50</td>
</tr>
<tr>
<td>PKDL</td>
<td>11</td>
<td>26</td>
</tr>
<tr>
<td>KATF</td>
<td>05</td>
<td>12</td>
</tr>
<tr>
<td>Kala-azar relapse</td>
<td>03</td>
<td>07</td>
</tr>
<tr>
<td>Para Kala-azar dermal leishmaniasis</td>
<td>02</td>
<td>05</td>
</tr>
</tbody>
</table>
We started treatment according to our National guidelines and the cases were followed up with the help of MODC of that health complex.
Conclusion

Kala-azar is a neglected disease since it affects the neglected sector of our population those who have no voice to spell their basic human rights.

The outbreak of kala-azar in that community outnumbered the usual pattern of distribution of cases.
It is obvious that large number of PKDL acts as reservoir of kala-azar. So epidemiological survey and elimination of this chronic neglected disease is necessary.
Thank You ...