Compliance to the treatment of malaria cases in Ahmedabad City- A Qualitative Study

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Abstract

Background
Malaria is a serious public health problem in India, accounting for sizeable morbidity, mortality and economic loss. A Revised National Drug Policy on Malaria adopted and the guidelines have been prepared for healthcare personnel including clinicians involved in the treatment of malaria.

Aim: 1) To study adherence to the protocol in diagnosis & management of malaria cases by private medical practitioners and Urban Health Centres (UHC) of Ahmedabad Municipal Corporation (AMC).

Methodology-
This was a qualitative study in which 29 UHCs and 97 private practitioners of three zones of Ahmedabad Municipal Corporation were visited. Case papers of last 2 months and all malaria related registers maintained at UHCs were evaluated and home visit of 115 malaria cases was carried out.

Observation & Discussion- 93.7% of patient with confirmed vivax malaria were prescribed Chloroquine and99.1% patient with confirmed malaria prescribed Primaquine with correct dose as per age & schedule. Only 78.8% private practitioner was following the guideline dose. 20.2% of private practitioner were not prescribing Primaquine at all.

Conclusion & Recommendation
There was lack of sensitization in some M.O. of U.H.C & private practitioners (other than M.D. Medicine) regarding prescribing treatment as per National Drug Policy for treatment of Malaria especially primaquine. Sensitization & involvement of private doctors for rational prescription through the Indian / Ahmedabad Medical Association must be carried out.

Introduction
Malaria is a serious public health problem in India, accounting for sizeable morbidity, mortality and economic loss. Apart from preventive measures, early diagnosis and adequate treatment are the important modalities that have been adopted to contain the disease. A revised National Drug Policy on Malaria adopted by the Ministry of Health and Family Welfare is a collaborative effort of National Vector Borne Disease Control Programme, National Institute of Malaria Research and experts from different parts of the country, and these guidelines have been prepared for healthcare personnel including clinicians involved in the treatment of malaria. The gold standard for diagnosis of malaria all over the world is the detection and demonstration of malaria parasite in the peripheral blood smear.

Aims & Objectives
1) To study prescription pattern of treatment of malaria amongst the private medical practitioners and Urban Health Centres (UHC) of Ahmedabad Municipal Corporation (AMC).
2) To study adherence to the protocol in diagnosis & management of malaria cases by Urban Health Centres.
3) To inform higher authority (Medical Officer Health, AMC; Municipal Commissioner) about the current situation in rational management of malaria & utilize the study findings for sensitization workshops for medical practitioners.

Methodology
Current study was a qualitative study carried out during the June to August 2012. This was assigned to the department of Community Medicine of our institute by Municipal Commissioner, AMC to see adherence to standard protocol for diagnosis and management of malaria for primary health care centers (UHCs) and compliance to National Guideline in treating the confirmed malaria cases by doctors of and private clinics/hospitals of the Central Zone, West Zone and New West Zone of Ahmedabad Municipal Corporation. As per the national drug policy confirmed P. vivax uncomplicated cases should be treated with chloroquine dose of 25 mg/kg divided over three days, primaquine should be given at a dose of 0.25 mg/kg body weight daily for 14 days under supervision.

Passive case detection (surveillance) - The detection of malaria cases from those fever cases who visit the Health facilities and are tested for malaria either through slide microscopy or through RDT.
Active case detection (surveillance) - The grass root worker (Link worker, MPW) would visit all houses within the his/her assigned area fortnightly and look for occurrence of fever cases between the current and previous visit.

Team Members- At least one Assistant/Associate professor from the department of Community Medicine & Medicine along with the residents of both departments visited & interviewed medical practitioner jointly.

Study sample-• All 29 UHCs of three zone viz. 9 UHCs of Central Zone, 10 UHCs of West Zone and 10 UHCs of New West Zone were visited.
• The list of private clinics/hospitals was obtained from health department of AMC. Out of 97 Private Hospitals/private clinics, 92 were visited. Deputy Municipal Commissioner (DyMC Health) issued orders for complying with the medical college team with regards to Malaria diagnosis & treatment at their clinics/hospitals.
Study Method
Evaluation of UHC

Predesigned proforma was prepared to collect information on the diagnosis & treatment protocol for urban health centres. All malaria registers maintained in UHCs were also studied. All laboratory registers related to malaria cases were also checked. All fever cases going to UHCs were advised P/S for MP on OPD case papers & then slides were examined, active surveillance for malaria were also verified.

- Out Patient Department (OPD) case papers of last two months at UHCs were studied to find out proportion of fever cases to total cases and confirmed malaria cases method of diagnosis & treatment given.
- Verification of information available in case papers and registers-Patients that diagnosed and treated for malaria were interviewed by visiting their home. No. of malaria cases confirmed within last three weeks (Active & Passive cases) were identified from the laboratory register & home visit of those patients who were the resident of area covered by the link worker of respective UHC was carried out. Patients who were not available home at the time of visits were excluded. Total 115 such confirmed malaria cases were interviewed at their homes regarding how and when he/she was diagnosed by UHC staff, what medicines were given (CQ & PQ) and also regarding repeat peripheral smear after 14 days.
- Cases documented in Laboratory Registers as lost to follow up were also cross checked in the field by visiting the area documented in the registers and they were found genuinely so.
- The following indicators for evaluation were used:
  1. Blood Smear Examination Rate- No. of fever cases examined for Malaria parasite by taking blood smear.
  2. No. of patient with confirmed malaria prescribed Chloroquine with correct dose as per age & schedule As per the national drug policy confirmed P. vivax uncomplicated cases should be treated with chloroquine state dose of 10 mg/kg body weight on day one & two, 5 mg/kg body weight on day three.2,4
  3. No. of patient with confirmed malaria prescribed Primaquine with correct dose as per age and schedule-Primaquine 0.75mg/kg body weight for 14 days.
  4. Percentage of confirmed malaria case tested for malaria parasite by follow up smear examination after completion of radical treatment (i.e. on 14 days)

Evaluation of private clinic/ hospitals- There were many limitation to evaluate compliance to National Guideline in treating the confirmed malaria cases by doctors of private clinics/hospitals as many do not keep case paper and those who keep record never disclose their treatment practice. Therefore our findings were based on the interview with medical practitioners regarding what treatment they prescribe for confirmed malaria cases. Indicators were not applicable.

Observation & Discussion

During these 2 months 3423 fever cases visited UHC of which blood smear was examined in 4752 patients (87.6%). Fever suspected to be Malaria were only investigated by blood smear, if signs & symptoms of patient were of URTI/UTI P’s for MP was not advised and were given treatment by clinical examination. During last two months there were 436 cases diagnosed positive for malaria parasite (P vivax-428, P. falciparum-8) out of which 133 patients were diagnosed in the field by link workers (Active surveillance) and 294 patient came to UHC for their illness & diagnosed (Passive surveillance). None of the confirmed cases has mixed infection or other variety of malaria.

All P. falciparum cases referred to higher centres for the treatment, their records of treatment was not available at UHC, as per the verbal information given by link Medical officer; these patients were treated as per the guideline. In 2 patients preferred seeking treatment from private doctors. 8 Patients completed Primaquine radical treatment in 7-10 days instead of 14 days due to lack of knowledge of the dose schedule while 5 Patients refused to take Primaquine.

Deviation from treatment- Treatment of vivax malaria with primaquine prevents the relapse of infection from residual liver stages of the parasite. Out of 428 Vivax cases treated, record of 397 cases was available as 35 confirmed cases patients were lost to follow up after receiving first dose of C.Q. Deviation from treatment was observed in 30 cases (7.6%) out of 397 cases. Except 3 cases (P.Q. was not covered by link worker & patient was not given Primaquine).

Table- Reason/s given by M.O. for deviated treatment

<table>
<thead>
<tr>
<th>Reason</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.O. was on leave</td>
<td>16</td>
</tr>
<tr>
<td>Pharmacist*</td>
<td>12</td>
</tr>
<tr>
<td>Pt. was underweight</td>
<td>1</td>
</tr>
<tr>
<td>Intolerance of dose by patient</td>
<td>1</td>
</tr>
</tbody>
</table>

*At one UHC, because of overwork once the patient diagnosed malaria positive, M.O. was assigning the task of treatment to pharmacist.

Out of 35 lost to follow up patients, 20 patients were the residing in other ward; M.O. of UHC had informed the M.O. of that respective UHC to convey the record of the patients residing in the area served by his/her UHC.
Home visit of confirmed malaria patient (Active & Passive cases):

Home visit to 115 cases were carried out and patients were interviewed and in the absence of patients their relatives were interviewed. Among these 115 cases, 81 (70.4%) patients had completed full course of Primaquine treatment. The follow up for PS for MP was not done in 26% (n=21) of all 81 cases who had completed Primaquine treatment, while in 1 case smear was taken but link worker did not submit to laboratory technician even after 2 days. All cases whose smear was taken & examined were negative for malaria parasite. All cases whose smear was taken & examined were negative for malaria parasite.

Table- Reasons for not taking follow up smear

<table>
<thead>
<tr>
<th>Reason/s Given by link worker</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lost to follow up despite of 4-5 home visits</td>
<td>14</td>
</tr>
<tr>
<td>Link Workers/MPW did not collect the follow up PS</td>
<td>4</td>
</tr>
<tr>
<td>Patient’s refusal for smear examination</td>
<td>2</td>
</tr>
<tr>
<td>Link worker was on leave</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
</tr>
</tbody>
</table>

*Explanation of link worker for not collecting smear:* In 2 cases area was covered under Malaria Department (2 cases), fear of complication by needle prick as the patient was diabetic & hypertensive (1 case), 3 year old child had fear of needle prick (1 case).

Table- Indicators

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Parameters</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Blood smear examination rate</td>
<td>87.0</td>
</tr>
<tr>
<td>2</td>
<td>Percentage of patient with confirmed vivax malaria prescribed Chloroquine with correct dose as per age &amp; schedule</td>
<td>93.7</td>
</tr>
<tr>
<td>3</td>
<td>Percentage of patient with confirmed malaria prescribed Primaquine with Correct dose as per age &amp; schedule</td>
<td>99.1</td>
</tr>
<tr>
<td>4</td>
<td>Percentage of confirmed malaria case tested for malaria parasite by follow up smear examination after completion of radical treatment (14 days)</td>
<td>74.1</td>
</tr>
</tbody>
</table>

Evaluation of private clinic/ hospitals - The team visited clinics of 89 private practitioners, (M.D. Medicine-59, M.B.B.S.-16, AYUSH-14, two doctors denied to meet our team). They were interviewed regarding the drug prescribing pattern in confirm case of malaria, and their responses entered in the proforma.

Treatment Of P. Vivax or uncomplicated malaria

Use of Chloroquine (CQ) - For uncomplicated malaria use of CQ is recommended while ACT was recommended for P falciparum or complicated malaria in National Malaria Treatment Guideline but 9 (10.1%) practitioners used ACT for uncomplicated P vivax malaria, 9 practitioners (1 BAMS and 8 M.D. Medicine) were prescribing Artensunate in all confirmed cases of Malaria irrespective of complication and species of parasite. Out of 77 practitioners who were prescribing CQ for uncomplicated malaria, only 5 practitioners were following the dosage schedule as per the guideline. Adherence to the guideline in prescribing CQ was found highest among the doctors with AYUSH (92.9%) or MBBS (93.8%) qualification. (See chart).

Chart - Prescription pattern as per the qualification of medical doctor

It is the well known fact that Primaquine is gametocidal drug which prevents relapse and plays key role in breaking man-mosquito-man cycle of malaria and therefore Primaquine is strongly recommended in the National Guideline2. Eighteen doctors (20.2%, 10 AYUSH, 5 MBBS, 3 M.D. Medicine,) practitioner were not prescribing Primaquine at all and 6 were prescribing only when they suspect malaria relapse/ recurrence. While 90% of M. D. medicine doctors were treating their patients with PQ as per the guideline. Only 78.8% (56 out of 71) were following the guideline dose. Overall adherence to the dosage guideline for prescribing PQ was better than CQ.

As a result of this study, there was improved compliance to the National Drug Policy including radical treatment of Primaquine by private doctors as well as Medical officers of UHCs of AMC.
Conclusion & Recommendation

At government health care delivery system, there was problem of coverage in borderline area as there were some houses which were neither covered by Malaria Department nor link worker & missed and lack of supervision on link worker’s quality of work (Treatment, compliance& Follow up smear of active case). We observed lack of sensitization in some M.O. of U.H.C & private practitioners (other than M.D. Medicine) regarding prescribing treatment as per National Drug Policy for treatment of Malaria especially primaquine. Inadequate dosage is related to a higher relapse risk. Primquine (15 mg/day for 14 days) plus chloroquine is more effective than chloroquine alone or primaquine (15 mg/day for 5 days) plus chloroquine in preventing relapses of vivax malaria, review. Referral forms (transfer In-transfer Out) made available at each UHC when patient is the resident of an area underserved by other UHC. Sensitization & involvement of private doctors for rational prescription through the Indian / Ahmedabad Medical Association must be carried out.

Reference

1. K. Park: Malaria, Park’s Textbook Preventive & Social Medicine ,22nd edition, Year 2013, M/s Banarasidas Bhanot publishers, Jabalpur, Pg 232.


3. Laboratory Diagnosis Of Malaria: Operational Guideline For Laboratory Technicians, National Rural Health Mission/Directorate of National Vector Borne Disease Control Programme, Govt. of India. http://www.nvbdcp.gov.in

