Malaria Prevention & Chemoprophylaxis

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Risk of malaria in Travelers

Malaria, 2005

Mekong Malaria
1 Red dot = 500 cases
Risks to get malaria depend on:
- Destination (rural/urban/forested area)
- Duration of stay
- Activity
- Climate and season
- Density of mosquito in specific area
- The used of insect repellents and bed net

Estimation of Attack rate:

\[
\text{Attack Rate} = \frac{\text{No. of malaria cases among travelers}}{\text{No. of Travelers exposed to malaria risk area}}
\]

Previous study toward malaria risk:
- Very limited data
- Many confounding factors
- Base on reported malaria cases only
- Travelers at risk are difficult to define and estimate

Estimated risk of acquiring malaria:

Risk in Thailand = 2:100,000
Risk in India = 14.4:100,000
Risk in Gambia = 253:100,000
Risk in Central America/Carribean = 1.3:100,000
Risk in South America = 7.2:100,000

Overall risk of malaria in travelers to Thailand

1:12,254


Travelers’ Malaria among foreigners at the HTD (2000-2005)

<table>
<thead>
<tr>
<th>Year</th>
<th>MP neg</th>
<th>PF</th>
<th>PV</th>
<th>Total</th>
</tr>
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<tbody>
<tr>
<td>2000</td>
<td>43</td>
<td>2</td>
<td>3</td>
<td>48</td>
</tr>
<tr>
<td>2001</td>
<td>16</td>
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<td>2002</td>
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<td>1</td>
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<td>39</td>
</tr>
<tr>
<td>2003</td>
<td>19</td>
<td>1</td>
<td>3</td>
<td>23</td>
</tr>
<tr>
<td>2004</td>
<td>9</td>
<td>2</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>2005</td>
<td>11</td>
<td>0</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>136</td>
<td>9</td>
<td>12</td>
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</tbody>
</table>

Total 21 Cases in 6 years


Country which malaria thought to be acquired in

GeoSentinel Surveillance Network
Network of Travel/Tropical Medicine institutes since 1996

Malaria Risk

Pros
- Reduce chance to get malaria 80-90%

Cons
- Take risk to develop side effects
- Not fully protected; limited efficacy against non-falciparum malaria
- May create false sense of safety
- Need good compliance

Antimalarial Chemoprophylaxis

Choice of Chemoprophylaxis

- Chloroquine-sensitive malaria: Chloroquine
- Chloroquine-resistant malaria
  - Mefloquine
  - Doxycycline
  - Atovaquone/proguanil
- Mefloquine-resistant malaria
  - Doxycycline
  - Atovaquone/proguanil

Doxycycline

- Dosage: 1 cap oral once daily
- Start 2-3 days before travelling and must continue throughout the travelling period and continue 4 wks after leaving risk area
- Side effect: abdominal discomfort, N/V, photosensitivity

Mefloquine

- Dosage: 1 tab oral once a week
- Start 1-2 week prior and must be continue 4 wks after traveling
- Side effect: Neuropsychiatric problem, gastrointestinal discomfort
- Not recommended in patients with epilepsy, psychosis, cardiac arrhythmias

Malarone

- Malarone (Atovaquone/Proguanil)
- Start 1-2 day after traveling and continue 1 tab once daily throughout the traveling and continue 7 days after leaving risk area
- Minimal side effect
- Very Expensive
When consider chemoprophylaxis

- Consider individually
  - Is it necessary?
  - Is it safe and effective?

- Benefit should be outweigh risk
- Education is very important

Our Practice

- Travel in Thailand only
  - Chemoprophylaxis is not recommended
  - SBET may not necessary
  - Mosquito bite prevention is essential
  - Aware signs and symptoms of malaria
**Beyond Thailand...**

**Boat trip to Luang Prabang**
- Slow boat
  - 6-7 hours to Pak Bang
  - Stay overnight
  - 7-8 hours to Luang Prabang
- Speed boat
  - 3 hours to Pak Bang
  - 1 hour lunch break
  - 3 hours to Luang Prabang

**Malaria in Mekong region**
- Extremely low risk in most tourist areas including Vientiane, Luang Prabang, Ankor Wat, Hanoi
- Malaria risk confine to rural area only
- Medical facilities are limited in remote area

**Chemoprophylaxis in Mekong region**
- Consider individually
- Chemoprophylaxis is recommended only in high risk group
- SBET may be considered in specific cases e.g. lone trekker, adventure travelers
- Choice of SBET
  - Atovaquone/Proguinil 4 tabs od for 3 days
  - Artesunate 4 tabs od for 3 days plus Mefloquine 3 tabs then 2 tabs 6 hour later
Traveler and Risk of malaria

- Risk should be
  - Understood
  - Managed
- Risk should not be
  - Overestimated or Underestimated
  - Afraid
  - Neglect

Our Practice

- Travel to Myanmar, Lao, Cambodia or Vietnam
  - Consider individually
  - Chemoprophylaxis is generally not recommended
  - SBET may be considered in specific cases e.g., lone trekker, adventure travellers

Our Practice

- Travel to High risk area e.g., Africa, PNG
  - Bite prevention is always essential
  - Chemoprophylaxis is generally recommended
  - Any episode of fever during or after the trip should be ruled out malaria

Southern Sudan

Bombay, India
**Principles of Malaria Prevention for Travelers**

- A – Awareness
- B – Bite prevention
- C – Chemoprophylaxis when appropriate
- D – Early Diagnosis

_WHO International travel and health 2007._

**Traveler and Risk of malaria**

- Risk should be
  - Understood
  - Managed
- Risk should not be
  - Overestimated or Underestimated
  - Afraid
  - Neglect

**Standby Emergency Treatment (SBET)**

- SBET is a medication set for treatment of malaria. _Not for prevention._

- Travelers who plan to carry SBET must
  - Understand how and when to use SBET
  - Written instruction is essential

**Guideline for the use of SBET**

- Has been stayed in the malaria risk area for more than 1 week.
- Fever with/without chill, abdominal pain, N/V, muscle ache, headache
- Medical services not available within 12-24 hrs.
- Take medications as prescribed
- Seek for medical care as soon as possible even after self-treated

**SBET Regimen for CQ resistance _P.f_**

- Malarone® (Atovaquone + Proguinil)
  - 4 tab once daily for 3 days (total 12 tablets)
- Coartem®, Riamet® (Artemeter + Lumefantrine)
  - 4 tab twice daily for 3 days (total 24 tablets)
- Artesunate
  - 4 tab once daily for 3 days (total 12 tablets)
  - PLUS Mefloquine 3 tab stat then 2 tab 6 h after
SBET Regimen for CQ resistance *P.f*

- Quinine + Tetracycline (Q7T7)
  - Quinine 2 tab oral tid for 7 days
  - Plus Tetracycline (250) 1 cap oral tid+hs for 7 days

Thank you for your attention