Opisthorchis viverrini Health Education Efforts and Reinfection Rates: A Review
Claire Smeltzer

Background: *Opisthorchis viverrini*

- *Opisthorchis viverrini* is a food-borne trematode found in the Lower Mekong Region of Southeast Asia, including parts of Thailand, Lao PDR, Cambodia, Myanmar, and Vietnam.
- Also known as a liver fluke, it can live in human bile ducts for decades, causing cholangitis, periductal fibrosis, and cholangiocarcinoma.
- Infection is acquired through the consumption of raw or undercooked fish in the Cyprinidae family.
- Efforts have been made to reduce infection through administration of praziquantel, sanitation methods, and health education programs.
- Reinfection remains common, largely due to cultural significance of dishes containing raw or undercooked fish.

Research Question

How does community health education affect rates of reinfection with *Opisthorchis viverrini*?

Methods

- **Data Base Search**
  - Search in PubMed, Scopus, Cochrane
  - Keywords “Opisthorchis viverrini” AND “education”
  - 190 articles identified

- **Exclusion of duplicates**
  - 120 articles identified

- **Inclusion criteria**
  - Articles published in English
  - Interventions related to health education
  - Primary data on infection rates following education
  - 4 articles identified

Results

Studies were assessed individually for reinfection rates with *O. viverrini* following education. Because studies were found to differ significantly in study design, incidence rates, and sample size, data were not pooled.

**STUDY 1: O. viverrini Reinfection with Education Intervention**

<table>
<thead>
<tr>
<th>Week</th>
<th>Initial incidence</th>
<th>Reinfection Year 1</th>
<th>Reinfection Year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>14.1</td>
<td>55.5</td>
<td>6.3</td>
</tr>
<tr>
<td>6</td>
<td>24.1</td>
<td>54.8</td>
<td>36.8</td>
</tr>
</tbody>
</table>

**STUDY 2: O. viverrini Prevalence in Three Villages**

- Village I: Praziquantel (6 months), Health Education & Sanitation (6 months)
- Village II: Praziquantel (12 months), Health Education & Sanitation (6 months)
- Village III: No intervention

<table>
<thead>
<tr>
<th>Time</th>
<th>Village I</th>
<th>Village II</th>
<th>Village III</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>10%</td>
<td>20%</td>
<td>30%</td>
</tr>
<tr>
<td>6</td>
<td>20%</td>
<td>30%</td>
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<td>12</td>
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<td>60%</td>
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<td>70%</td>
<td>80%</td>
</tr>
<tr>
<td>36</td>
<td>70%</td>
<td>80%</td>
<td>90%</td>
</tr>
</tbody>
</table>

**STUDY 3: O. viverrini Reinfection One Year after 12-Week Public Health Intervention**

- **Strengths**
  - Measurement of incidence before intervention
  - Health education provided to all participants
  - Large sample size (3674 fecal samples)
- **Weaknesses**
  - Lack of control group
  - Exclusion of residents diagnosed with a parasitic infection within the last 5 years

**STUDY 4: O. viverrini Reinfection One Year after Health Education & Sanitation**

- **Strengths**
  - Length of study (3 years)
  - Regular assessment of infection rates (every 6 months)
- **Weaknesses**
  - Treatment in village III delayed until the end of 3 years
  - Combined praziquantel, health education, and sanitation interventions

Conclusions

- While some health education methods have shown a reduction in reinfection rates of *Opisthorchis viverrini*, it is difficult to demonstrate conclusive success of these interventions due to limited studies, small sample sizes, and variability in disease incidence.
- Given the continued prevalence of infections in Southeast Asia, further studies are needed to determine effective interventions to reduce reinfection rates.

Citations & Acknowledgments

- **Included studies**
- **Acknowledgments:** Special thanks to Dr. Sutas Suttiprapa and the Tropical Disease Research Center at Khon Kaen University.