Kinship and leprosy in contacts of leprosy patients. Cohort at the Souza Araújo Outpatient Clinic, Rio de Janeiro, RJ, 1987-2010.

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Introduction

The long time of latent period difficult the understanding of leprosy transmission.

Contacts of leprosy patients are known to have a higher risk of illness than the general population.

A variety of factors has been associated with leprosy among contacts, including socio economic and biological individual factors and epidemiological factors related to the index case.

Contact surveillance is important to ensure early diagnosis and control of leprosy.
Introduction

The studies had evaluated risk factors of disease among contacts

- Index case BI and Clinical form (Vijayakumaran et al 1998; Sales et al 2012)
- Index case consanguinity (Moet et al 2006)
- Educational level (Matos et al 1999)
- BCG Scar (Duppre 2008)
- Index case physical proximity (Moet et al 2006)
Objective

The objective of the present epidemiological study was to assess the relationship of kinship and illness in a cohort of leprosy patient contacts under surveillance at a referral center.
Methods

Study Site

Souza Araújo Outpatient Clinic (ASA), from Oswaldo Cruz Foundation, is a referral center providing ongoing clinical and laboratory care as well as preventative education and research on leprosy.
Methods

The clientele is primarily composed of individuals from the City of Rio de Janeiro, its metropolitan area and beyond.

Most new patients arrive referred by public and private health services but some come spontaneously to check out a suspicion of leprosy.
Methods

Retrospective study of a cohort: Total N=7174, 1987-2010

Prevalence Analysis
N=7012 (excluded incidents)

Odds ratios = OR
Outcome: prevalence

Incidence Analysis
N=6831 (excluded prevalents)

Relative risks = RR
Outcome: incidence

Multivariate regression models

Independent variables

Index Case
Contacts

Kinship
Social-demographic and Epidemiologic variables
Prevalence Results

Cohort of leprosy contacts N=7174

Prevalents total=7012
  Initial examination

Consanguineous
  Parents
  Sibling
  Offspring
  Other relatives

No-consanguineous
  Spouse/boyfriend, girlfriend/bride/groom
  Social bonds

Related factors
  Skin color
  Educational level
  Length of time of close association
  Bacillary index
  BCG scar
## Prevalence Results

**Kinship in prevalence in a cohort of contacts Souza Araújo Outpatient Clinic, Rio de Janeiro, 1987-2010.**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Prevalence Adjusted OR (95% IC)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Kinship</strong></td>
<td></td>
</tr>
<tr>
<td>Social bonds</td>
<td>1</td>
</tr>
<tr>
<td>Spouse, boy/girlfr, br/gr</td>
<td>1.25 (0.74-2.11)</td>
</tr>
<tr>
<td>Parents</td>
<td>1.69 (0.97-2.96)</td>
</tr>
<tr>
<td>Sibling</td>
<td>2.75 (1.65-4.57)</td>
</tr>
<tr>
<td>Child</td>
<td>2.00 (1.18-3.39)</td>
</tr>
<tr>
<td>Others consanguineous relatives</td>
<td>1.70 (0.98-2.94)</td>
</tr>
</tbody>
</table>

Adjusted by: skin color, educational level, type of close association, lentgh of time of close association, BCG scar, index case BI.
Incidence Results

Cohort of leprosy contacts N=7174

Incidents total=6831
Follow-up examination

Consanguineous
- Parents
- Sibling
- Offspring
- Other relatives

No-consanguineous
- Spouse/boyfriend, girlfriend/bride/groom
- Social bonds

Related factors
- Skin color
- Bacillary index
- BCG scar
## Incidence Results

<table>
<thead>
<tr>
<th>Kinship</th>
<th>Incidence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Adjusted RR (95% IC)</td>
</tr>
<tr>
<td>Social bonds</td>
<td>1</td>
</tr>
<tr>
<td>Spouse, boy/girlfr, br/gr</td>
<td>7.53 (2.51-22.57)</td>
</tr>
<tr>
<td>Parents</td>
<td>10.93 (3.48-34.27)</td>
</tr>
<tr>
<td>Sibling</td>
<td>7.03 (2.41-20.46)</td>
</tr>
<tr>
<td>Child</td>
<td>5.34 (1.74-16.38)</td>
</tr>
<tr>
<td>Others consanguineous relatives</td>
<td>3.71 (1.24-11.06)</td>
</tr>
</tbody>
</table>

Adjusted by: skin color, educational level, type of close association, length of time of close association, BCG scar, index case BI.
Discussion

Our findings suggested that both, genetic susceptibility (consanguineous) and physical exposure (no-consanguineous), play an important role in the epidemiology of leprosy.
Discussion

Prevalence analysis allowed to identify factors associated with leprosy before of the therapeutic interventions of index case.

Incidence analysis enabled to identify other risk factors independent of exposure to the index case infectiveness and other control measures such as the administration of the BCG vaccine to a contact.
Conclusion

It was not possible to establish the role of kinship in the transmission of leprosy.

This may be explained by other factors such as genetic susceptibility (e.g. polymorphisms), exposure to infected asymptomatic individuals and long time of latency period.

Prospective cohorts of long-term surveillance is required in order to know the natural history of leprosy infection.
Thank you!