<table>
<thead>
<tr>
<th>Title</th>
<th>Influence of vaccination dose and catch-up campaign on antibody titers against measles and rubella among university students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author(s)</td>
<td>Takeuchi, Jiro</td>
</tr>
<tr>
<td>Citation</td>
<td>京都大学</td>
</tr>
<tr>
<td>Issue Date</td>
<td>2014-03-24</td>
</tr>
<tr>
<td>URL</td>
<td><a href="https://doi.org/10.14989/doctor.k18173">https://doi.org/10.14989/doctor.k18173</a></td>
</tr>
<tr>
<td>Right</td>
<td>学位規則第 条第 項により要約公開</td>
</tr>
<tr>
<td>Type</td>
<td>Thesis or Dissertation</td>
</tr>
<tr>
<td>Textversion</td>
<td>none</td>
</tr>
</tbody>
</table>
Original articles: Clinical Investigations

Serological assessment of measles-rubella vaccination catch-up campaign among university students

Running title: Serology of catch-up vaccination

Jiro Takeuchi¹, Masashi Goto²*, Takashi Kawamura³, and Atsushi Hiraide ⁴

¹, ², ³ Kyoto University Health Service, Yoshida-Honmachi, Sakyo-ku, Kyoto 606-8501, Japan, ⁴ Department of Acute Medicine, Kinki University Faculty of Medicine, 377-2 Ohno-Higashi, Osaka-Sayama, Osaka 589-8511, Japan

Telephone: +81-75-753-2416
Fax: +81-75-753-2424
Email addresses: ¹ jiroutakeuchi@gmail.com, ² goto@msa.biglobe.ne.jp, ³ kawax@kuhp.kyoto-u.ac.jp

Telephone: +81-72-366-0221
Fax: +81-72-368-3700
Email addresses: ⁴ hiraide@med.kindai.ac.jp

* Correspondence: Masashi Goto, MD, MPH, PhD, Kyoto University Health Service, Yoshida-Honmachi, Sakyo-ku, Kyoto 606-8501, Japan.
Email: goto@msa.biglobe.ne.jp

Number of text pages: 11
Number of reference pages: 5
Number of Tables: 3
Abstract

**Background:** In Japan, 5000-300,000 persons succumbed to measles every year until 2001. Measles/rubella-combined (MR) vaccination at age 17-18 years (phase 4 MR vaccination: MR-IV) was launched in 2008 in Japan as a measles-rubella catch-up campaign. A serological assessment of this campaign has not been thoroughly performed.

**Methods:** Titers of anti-measles and anti-rubella immunoglobulin G antibodies, and past medical history including measles and rubella vaccination and infection were obtained from first-year university students in 2008 and 2009, and the immune status against measles and rubella was compared between students at the target MR-IV age (the target age group) and those a year older than the target age (non-target age group).

**Results:** 186 students were in the target age group and 146 were in the non-target age group. The proportion of students with a history of measles and rubella infection was not significantly different between the 2 groups (8.8% vs. 6.3%, $P = 0.41$ and 11.0% vs. 9.9%, $P=0.75$, respectively). A history of two or more measles and rubella vaccinations was significantly more frequent in the target age group (85.2% and 54.9%, respectively) than in the non-target age group (20.8% and 13.2%, respectively) (both $P < 0.001$). Proportions of seropositives for measles and rubella were also greater in the target age group (98.9% and 97.8%, respectively) than in the non-target age group (91.0% and 87.5%, respectively) (both $P < 0.001$).

**Conclusions:** The MR-IV catch-up campaign helped achieve herd immunity and will contribute to the elimination of measles and rubella.
Key words: antibody, catch-up campaign, Maternal and Child Health Handbook, measles-rubella vaccination, university students.