Pertussis outbreak mainly in unvaccinated young children in ultra-orthodox Jewish groups, Jerusalem, Israel 2023

Chen Stein-Zamir\textsuperscript{1,2} MD, MPH, PhD, Hanna Shoob\textsuperscript{1} MPH, Nitza Abramson\textsuperscript{1} MD, MPH, Emilie Hannah Brown\textsuperscript{1,2,3} MPH, Yael Zimmermann\textsuperscript{1} MD.

2. The Hebrew University of Jerusalem, Faculty of Medicine, The Hebrew University and Hadassah Braun School of Public Health and Community Medicine, Jerusalem, Israel.
3. University of Miami, School of Public Health, Miami, Florida, US.

Running title:

Pertussis outbreak in unvaccinated children.

This is an Open Access article, distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives licence (http://creativecommons.org/licenses/by-nc-nd/4.0/), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is unaltered and is properly cited. The written permission of Cambridge University Press must be obtained for commercial re-use or in order to create a derivative work.
Key words: Pertussis, Pertussis vaccine, outbreak, ultra-orthodox

Corresponding author: Prof. Chen Stein-Zamir ()
Jerusalem District Health Office, 86 Jaffa Road, Jerusalem 94341, Israel.
Tel: +972-2-5314800/2 Fax: +972-2-5314861 mobile phone +972-50-6242601.
E-mail: chen.zamir@lbjr.health.gov.il; chen.zamir@mail.huji.ac.il

Abstract
Despite being a vaccine preventable disease for decades, pertussis control is still a public health challenge. A pertussis outbreak emerged in Jerusalem (n=257 cases, January to June 2023). Most cases were young children (median age 1.5 years), 100 were infants under 1 year. The infants’ hospitalization rate was 24%, considerably higher than in cases aged 1 year and above (3.8%). There was one fatality in an unvaccinated, 10-week-old infant whose mother had not received pertussis vaccination in pregnancy. Most children were unvaccinated and resided in Jewish ultra-orthodox neighborhoods in the Jerusalem district. An intervention program and vaccination campaign are ongoing.
Introduction

Bordetella pertussis infection is transmitted from person to person via exposure to the respiratory secretions of infected individuals, primarily through large droplets produced during coughing or sneezing [1]. In epidemiological studies, the highest disease burden of pertussis (including the age-specific incidence rates, pertussis hospitalizations, complications, and fatalities) has been observed in infants under one year [2-4]. The peak pertussis burden occurred in infants under 6 months, who were not yet eligible for the full pertussis vaccination schedule or unvaccinated [4]. In a modelling study on the global burden of pertussis among young children (for 2014), an estimated 24.1 million pertussis cases and 160,700 deaths occurred among children under 5 years of age, with an estimated 5.1 million (21%) pertussis cases and 85,900 deaths (53%) among infants under 1 year of age [5].

Despite being a vaccine-preventable-disease for decades, pertussis has remained a global public health challenge. Resurgence of pertussis in the vaccination era has been reported, even in countries with well-established routine childhood vaccination programs [6]. In Israel, the current routine childhood immunization program includes the pentavalent Diphtheria–Tetanus-acellular Pertussis- Polio-Haemophilus influenzae type b vaccine (DTaP-IPV-Hib) scheduled at the ages of 2 months, 4 months, 6 months, and 12 months [7]. In the schoolchildren, the Tetanus-Diphtheria-acellular-Pertussis vaccine (Tdap) is recommended at ages 7 years and 13 years [7]. Pertussis vaccinations in pregnancy were included in the national health basket in Israel in 2015 [7]. A single Tdap dose is recommended for pregnant women in the third trimester (in weeks 27 – 36) of each pregnancy; vaccinations in pregnancy are provided by the Health Funds [7]. Routine childhood vaccinations in Israel are free of charge and provided to children in the community-based well-baby clinics (for ages birth – 6 years) and by the school health services.
(for ages 6-15 years); all vaccination data are digitally documented in computerized health records and incorporated into the national immunization registry [8].

Overall, the rates of respiratory infections showed a trend of decline during the years of the global COVID-19 pandemic (2020-2022), probably associated with reduced transmission with the implementation of containment directives such as lockdowns, various social distancing measures and extensive utilization of face masks [9,10]. In 2023 an increase in respiratory infections rates (including pertussis) have been noted in several countries and pertussis outbreaks emerged and were reported from Canada, the Philippines, South Africa, Bolivia, the United States of America, Malaysia, and also in Israel [11]. In early 2023, an increase in the number of pertussis notifications have been observed in Israel, with most pertussis cases reported in the Jerusalem district. We aimed to describe the epidemiology of the pertussis outbreak in the Jerusalem district during January to June, 2023.
Outbreak description

A rise in pertussis notifications in the Jerusalem district has been noted during January 2023. The number of pertussis notifications in the district in January–June 2023 was 257, compared to 19 notified pertussis cases in 2022 and four cases in 2021. Most pertussis cases notified nationally during January–February 2023 (94.9%, 56/59) were reported in the Jerusalem district. The number of notified pertussis cases from other districts increased gradually during March–June 2023, with the Jerusalem district comprising 63.7% (201/314) of the cases nationally.

Bordetella pertussis infection is legally notifiable in Israel; physicians and laboratories notify cases to the district health office, in charge of the epidemiological investigations and infection control measures [12]. The epidemiological data collected include age, gender, address, date of disease onset, laboratory tests, hospitalization, and outcome and vaccination status. Additional variables collected in cases of infants under 1 year include birthweight, birth order, mother's age and receipt of pertussis vaccine in pregnancy. The pertussis laboratory confirmation is predominantly based on Polymerase Chain Reaction (PCR) tests. Data analysis is performed with the Statistical Package for Social Sciences, SPSS® software. Variables are compared by Student t test, Pearson chi-square test and Odds Ratio (OR) with 95% Confidence Interval (95%CI), as appropriate. A p-value <0.05 is considered significant for all comparisons.

The Jerusalem district population is 1.37 million (2022, 14.6% of Israel’s general population). Children under 5 years (178,000) and infants under one year (37,000) comprise 13% and 2.7% of the district’s population, respectively. The Jerusalem district livebirths are recorded in the district’s newborn registry. Notably, the Jerusalem district’s infants comprise some 20% of the national cohort (185,000, 2022), attributable to the district’s population high fertility rates.
The general characteristics of the notified pertussis cases in the Jerusalem district during January–June 2023 (n=257) are presented in table 1. The vast majority of the pertussis cases were children, 92.2% of them were under 19 years of age. The median age of the outbreak’s pertussis cases was 1.5 years. Infants under 1 year of age consisted the largest group (n=100). In the pertussis cases in infants under 1 year, the median age was 5 months. The largest fraction has been observed in infants aged 0 to 3 months (n=35 cases). Most of the infants were born with normal birthweight, 7% had birthweight less than 2500 grams. The pertussis cases in infants had a median birth order of five (mean 5.4±3.3), some 67% of them had a birth order of four and above. According to the Jerusalem district newborn registry, the overall median birth order was three (mean 3.5±2.4, 2022 cohort). The pertussis cases in infants showed a significantly higher mean birth order compared to the district cohort (p< 0.001).

The hospitalization rate observed among infants under 1 year of age (24%) was significantly higher than the rate in persons aged 1 year and above (3.8%), (OR= 7.9, 95%CI 2.9 -24.6, p< 0.001). The hospitalization rate also differed significantly between pertussis cases in infants under 3 months (54.3%) and those aged 3-12 months (7.7%), (p< 0.001).

Overall, infants under 1 year accounted for most pertussis-related hospitalizations (80%) in the Jerusalem district during January–June 2023 and one death. The fatal case occurred in a previously healthy, unvaccinated, 10-week-old infant whose mother had not received pertussis vaccination in pregnancy. The infant’s clinical symptoms included coughing fits, whooping, vomiting, apnea and cyanosis. Pertussis PCR was positive. Hospitalization occurred at age 7 weeks with need for mechanical ventilation and later Extracorporeal Membrane Oxygenation (ECMO); after 3 weeks of hospitalization, the infant succumbed to multi-organ failure.
The vaccination status of each case has been confirmed against the national vaccination registry, in the children aged 0-18 years and based on the epidemiological investigations in persons aged 19 years and above. The vaccination status of the pertussis cases (according to age groups), presented as the distribution of the number of prior pertussis vaccine doses, is shown in table 2. Of the outbreak’s pertussis cases, about 30% had received at least one pertussis vaccine dose; some 70% were unvaccinated. The vaccinated fraction among infants aged 2 months to 1 year (eligible for the first pertussis vaccine dose, n=80) was 15% (12/80) and in children aged 1 to 2 years the vaccinated fraction was 14.3% (6/42). All the pertussis cases in children aged 0-6 years were evaluated with all the preventive health services providers in the Jerusalem district; none of the unvaccinated children had been registered in any of the district’s well-baby clinics.

In the group of children aged 7-18 years (n=52, mean age 11±2.9 years, median 11 years), 38 (73.1%) had received four or more pertussis vaccine doses. The mean time between the last vaccine dose and the date of reported pertussis diagnosis was 5±2.7 years, median 5.4 years. Regarding receipt of pertussis vaccination in pregnancy in mothers of infants’ cases, 84/100 mothers had not received vaccination. Sixteen mothers reported receiving pertussis vaccination in the third trimester of pregnancy. In the vaccinated mothers, the mean number of days between the date of pertussis vaccine receipt and the childbirth date was 65±26.8 days (median71.5 days). Three of the vaccinated mothers received the pertussis vaccine 14 days or less before childbirth. The mother and infant vaccination status were positively associated. Among the infants aged 2 months to 1 year - 53.3% (8/15) of infants, whose mothers were vaccinated in pregnancy, received one pertussis vaccine dose compared to 6.1% (4/65) of infants whose mothers were not vaccinated in pregnancy (OR= 17.4, 95%CI 3.4 -95.6, p< 0.001).
Notification of additional pertussis cases in the same household has been observed in 33/257 (12.8%) of the outbreak cases. Two pertussis cases have been notified in thirteen households, three and four pertussis cases have been notified in one household each.

The 2023 pertussis cases were evaluated according to the cases’ geographic areas of residency in the Jerusalem district, in search for clusters. Most pertussis cases resided in the ultra-orthodox Jewish neighborhoods in the city of Jerusalem (108/275, 42%), the ultra-orthodox Jewish neighborhoods of Beit Shemesh (BS, 94/275, 36.6%) and in the ultra-orthodox Jewish town Beitar Illit (BI, 25/257, 9.7%) in communities that are highly interconnected. There were certain streets with large numbers of pertussis cases; 23 cases were reported in one street in an ultra-orthodox neighborhood in BS, and 17 cases in one street in a neighborhood in an ultra-orthodox neighborhood in central Jerusalem. Notably, the spread of pertussis to other districts in the country (mainly reported in unvaccinated children) has been epidemiologically linked to the cases in the Jerusalem district, through various familial and social interactions.

Figure 1 shows the epidemiological curve of the notified pertussis cases in the Jerusalem district during 2022 (by quartiles) and during January–June 2023 (by month), with the fractions of cases in infants under 1 year of age and persons aged 1 year and above of all reported pertussis cases. In 2022, no pertussis cases were reported in infants in the Jerusalem district. In 2023, the fraction of infants of all the reported pertussis cases in the district was 55.4% in January–February 2023 and then declined to 37.9% of cases during March–April 2023 and to 29.4% of cases during May-June 2023 (Mantel-Haenszel chi square for linear trend = 9.1, p-value=0.003).

Figure 2 presents the annual number of reported pertussis cases in infants under 1 year of age in the Jerusalem district during the years 2000-2023, the age-specific annual incidence rate of pertussis in infants under 1 year of age (per 100,000) and the district’s overall annual pertussis
incidence rate (per 100,00 population). Notably, there are considerable fluctuations in pertussis incidence rates between “endemic” and “epidemic” years. The current pertussis outbreak has already reached, in the first six months of 2023, the extent of annual number of pertussis cases and incidence rates (in infants and overall) reported during previous pertussis outbreaks observed in the years 2011-2012, 2015 and 2019.

The intervention

With the rise in pertussis notifications in January 2023, the Jerusalem district health issued an alert to all the health organizations (hospitals and health funds) to increase awareness, reporting on cases and promoting vaccinations. As the current outbreak emerged mainly among young children in under-vaccinated Jewish ultraorthodox communities, the planning and application of control measures involved referring to the unique sociocultural characteristics of these communities. All the providers of preventive health services in the Jerusalem district were continuously notified on the epidemiological data of the pertussis outbreak, as well as consulted as to the coordination of the public health interventions.

The interventions included recruiting social marketing experts who are familiar with the communities and launching of a campaign of providing information (on the severity and consequences of pertussis, especially in young infants, and the importance of prevention) to the public in a culture-adapted manner. The target groups for intervention aiming to increase vaccination coverage in the Jerusalem district were defined as: 1. Unvaccinated (“zero doses”) and undervaccinated infants and toddlers. 2. Pregnant women in the weeks 27 – 36 of pregnancy.

According to the ministry of health guidelines and aiming to rapidly protect the young infants, the well-baby clinics in the district provide the first dose of pertussis-containing vaccine at the age of 6 weeks with the second and third vaccine doses provided at least 4 weeks apart [7,12].
The families with unvaccinated children are repeatedly encouraged to approach the community well-baby clinics for catch-up vaccinations without the need to schedule an appointment. The health care providers operate a system of reminders to pregnant women to come for the third trimester pertussis vaccinations. The district’s primary care teams (physicians and nurses) received educational sessions (mainly through professional webinars) on pertussis and its complications and how to convey the message of the importance of vaccinations to their patients, with illustrations of frequent questions and answers. A complex process of data linking is currently in progress to enable identification of children without documentation of registration at any of the preventive health services providers in the district (and hence unvaccinated). A dedicated call center will approach the parents of the unvaccinated children telephonically and encourage them to bring the child for vaccinations as soon as possible. The process is still under development.

**Discussion**

Pertussis outbreaks have emerged in various locations in the world during 2023, shortly after the global COVID-19 pandemic [11]. Pertussis resurgence and infection transmission are associated with underutilization of pertussis vaccinations and waning immunity, leading to decreased herd immunity [3]. Implementation of comprehensive, sustainable and updated pertussis vaccination strategies is essential, aiming to prevent and contain future outbreaks, as well as protection of risk groups, especially young infants [3]. The two main components necessary for promoting better pertussis control are improving vaccination strategies with the currently available vaccines and development of novel highly immunogenic and efficacious pertussis vaccines [6].

The fundamental preventive measure for successful control and elimination of vaccine-preventable-diseases (including pertussis) is achieving sustained high vaccination coverage [13].
The Global Vaccine Action Plan goals were to achieve vaccination coverage of at least 90% with three doses of diphtheria-tetanus toxoid-pertussis-containing vaccine (DTP) by the year 2015 and at least 90% with all vaccines in the national programs by the year 2020 [14]. According to the United Nations Children’s Fund (UNICEF) recent report, “The State of the World’s Children 2023”, the COVID-19 pandemic has devastatedly affected the childhood vaccination coverage globally [15]. The vaccination coverage rates of DTP3 among one-year-old children worldwide decreased from 86% in 2019 to 81% in 2021, with about 25 million children missing out on vaccination, 6 million more than in 2019 and the highest number reported since 2009 [15]. In response, coordinated recovery plans are applied by international health organizations and agencies, to restore the previous achievements of the Global Vaccine Action Plan in children.

In Israel, according to the vaccination report issued by the ministry of health in June 2023, the overall national vaccination coverage rates for the fourth dose of the DTaP (diphtheria-tetanus–acellular pertussis), DTaP4 vaccine among children (scheduled at the age of 12 months), declined from 96.8% in 2017 to 91% in 2022 [16]. Among children in the Jerusalem district, the overall vaccination coverage rate for the DTaP4 vaccine decreased considerably from 93.7% in 2017 to 84.1% in 2022 [16]. We have previously described vaccination incompleteness and vaccination delays among children in the Jerusalem district, prevailing predominantly in children in the Jewish ultraorthodox communities, and associated with the emergence of recurrent vaccine-preventable-diseases outbreaks [17]. These communities have also been the epi-center of previous measles, mumps and pertussis outbreaks in the Jerusalem district [17]. The recent event of the circulating vaccine-derived poliovirus type 3 (VDPV 3) in Jerusalem in 2022, with a clinical cases of acute flaccid paralysis in a 3.8-years-old unvaccinated child and multiple positive environmental samples for VDPV 3, also occurred in these communities [18]. Large
households and overcrowding characterize these communities. In our study, the pertussis cases in infants had a high birth order, previously associated with delayed childhood vaccinations [17].

The highest disease burden of pertussis in repeatedly documented in infants under 1 year of age and specifically during the early months of life [1,2,5,6,19]. In a systematic review [19], a wide range of pertussis incidence rates were reported in infants younger than 2-3 months of age, some exceeding 1,000 per 100,000 population in several countries during outbreaks, and virtually all pertussis deaths occurred in this age group. Our data demonstrate that young infants present the highest burden of infection (with pertussis incidence rates in infants under 1 year of age, in the Jerusalem district, reaching 300 per 100,000 population, during years of outbreaks) and of pertussis-related hospitalizations. In the last decade, many countries (including Israel) have introduced recommendations for administration of pertussis vaccine in pregnancy, aiming to protect the very young infants through transfer of maternal antibodies [1,6,7,19]. The pertussis vaccination strategies in pregnancy have been reported as being highly effective against pertussis infection and pertussis disease-related hospitalizations among infants under 3 months old [1]. However, the compliance with maternal pertussis vaccinations in pregnancy varies widely between population groups, and in our group, the compliance (16%, as reported by the mothers in the epidemiological investigations) was inadequate. Infants’ protection is also achieved by timely administration of pertussis vaccinations, primary series and boosters [1,6,7,19]. Yet, in our group most eligible infants (85%) were unvaccinated and not registered in any clinic of the preventive health services providers in the district, despite the fact that these services are offered free of charge. Considerable efforts focused on the hard-to-vaccinate population groups are made by a coalition of the health organizations in the Jerusalem district, to promote maternal
vaccinations, infants’ early registration to the free preventive services and receipt of childhood vaccinations [17].

Our study is subject to limitations. It is a descriptive observational study of a pertussis outbreak in a defined district (Jerusalem) with most cases reported in unvaccinated children residing in Jewish ultraorthodox communities. Most cases were young with a median age of 1.5 years and a notably high birth order indicating large households. Hence, generalization of the findings might be difficult. The characteristics of the affected communities, households’ size and living conditions, that affect pertussis transmission, may differ between population groups and settings. Also, pertussis laboratory confirmation was performed by PCR tests. Possibly, milder clinical cases were underdiagnosed and not referred to PCR tests. Considering the characteristics of the involved communities and the likelihood of transmission, milder cases might have been missed. The vaccination status of children was verified via the national immunization registry [8] while in persons aged 19 and above (7.8%) the information was based on the cases’ epidemiological investigations. Presumably, the self-reporting might have caused bias in the adult group.

In conclusion, despite the availability of effective pertussis vaccines for over six decades, pertussis control is still inadequate and so Bordetella pertussis is circulating in many countries. The management of pertussis resurgence, particularly during the COVID-19 pandemic and beyond, necessitates a robust public health infrastructure. Improving and sustaining pertussis vaccination coverage in infants and young children, globally and locally, as well as provision of maternal vaccinations, are essential to prevent the high pertussis diseases burden in young infants (pertussis-related hospitalizations and mortality). In hard-to-vaccinate communities, long-term programs and constant investments are required to ensure prevention of pertussis outbreaks.
Figure legends

Figure 1

The epidemiological curve of notified pertussis cases, Jerusalem district, 2022 (by quartiles) and January–June 2023 (by month), with the fractions of cases in infants under 1 year and persons aged 1 year and above of all reported pertussis cases.
Figure 2

The annual number of reported pertussis cases in infants under 1 year in the Jerusalem district in 2000-2023, the age-specific annual incidence rate of pertussis in infants under 1 year (per 100,000) and the district’s overall annual pertussis incidence rate (per 100,000 population).
References


10. World Health Organization. Pertussis reported cases and incidence. 


https://www.gov.il/he/Departments/publications/reports/vaccination-coverage-june-2023


https://www.who.int/emergencies/disease-outbreak-news/item/2022-DON366

Table 1. General characteristics of the pertussis cases, Jerusalem district, January-June 2023

<table>
<thead>
<tr>
<th>Variable</th>
<th>Cases (n = 257)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years) mean ±SD</td>
<td>6.8±12.5</td>
</tr>
<tr>
<td>Age (years) median (interquartile range)</td>
<td>1.5 (0.6-7.7)</td>
</tr>
<tr>
<td>Gender, male (%)</td>
<td>115 (44.7%)</td>
</tr>
<tr>
<td><strong>Age group</strong></td>
<td></td>
</tr>
<tr>
<td>0-3 months</td>
<td>35 (13.6%)</td>
</tr>
<tr>
<td>4-6 months</td>
<td>18 (7%)</td>
</tr>
<tr>
<td>&gt;6 months-1 year</td>
<td>47 (18.3%)</td>
</tr>
<tr>
<td>Age 1-6 years</td>
<td>85 (33.1%)</td>
</tr>
<tr>
<td>Age 7-18 years</td>
<td>52 (20.2%)</td>
</tr>
<tr>
<td>Age 19 years and above</td>
<td>20 (7.8%)</td>
</tr>
<tr>
<td><strong>Hospitalization</strong> (all cases)</td>
<td>30 (11.7%)</td>
</tr>
<tr>
<td>Hospitalization infants under 1 year</td>
<td>24 (24%)</td>
</tr>
<tr>
<td>Hospitalization persons 1 year and above</td>
<td>6 (3.8%)</td>
</tr>
<tr>
<td><strong>Data for infants under 1 year (n=100)</strong></td>
<td></td>
</tr>
<tr>
<td>Birthweight (g) mean ±SD</td>
<td>3284±553</td>
</tr>
<tr>
<td>Birthweight (median) (interquartile range)</td>
<td>3335 (3053 - 3655)</td>
</tr>
<tr>
<td>Birth order (mean ±SD)</td>
<td>5.4 ±3.3</td>
</tr>
<tr>
<td>Birth order (median) (interquartile range)</td>
<td>5 (3-7)</td>
</tr>
<tr>
<td>Mother’s age (years) mean ±SD</td>
<td>30.9±7.1</td>
</tr>
<tr>
<td>Mother’s age (years) median (interquartile range)</td>
<td>31 (25-37)</td>
</tr>
<tr>
<td>Mother’s birth country Israel</td>
<td>89 (89%)</td>
</tr>
</tbody>
</table>
Table 2. Vaccination status (number of doses of pertussis vaccine) of the pertussis cases, Jerusalem district, January-June 2023

<table>
<thead>
<tr>
<th>Age group</th>
<th>n</th>
<th>Unvaccinated (%)</th>
<th>1 dose</th>
<th>2 doses</th>
<th>3 doses</th>
<th>≥4 doses</th>
</tr>
</thead>
<tbody>
<tr>
<td>All cases</td>
<td>257</td>
<td>177 (68.9%)</td>
<td>17 (6.6%)</td>
<td>1 (0.4%)</td>
<td>9 (3.5%)</td>
<td>53 (20.6%)</td>
</tr>
<tr>
<td>0-3 months</td>
<td>35</td>
<td>29 (82.9%)</td>
<td>6 (17.1%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4-6 months</td>
<td>18</td>
<td>16 (88.9%)</td>
<td>1 (5.6%)</td>
<td>0</td>
<td>1 (5.6%)</td>
<td>0</td>
</tr>
<tr>
<td>&gt;6 months-1 year</td>
<td>47</td>
<td>43 (91.5%)</td>
<td>1 (2.1%)</td>
<td>0</td>
<td>3 (6.4%)</td>
<td>0</td>
</tr>
<tr>
<td>Total &lt;1 year</td>
<td>100</td>
<td>88 (88%)</td>
<td>8 (8%)</td>
<td>0</td>
<td>4 (4%)</td>
<td>0</td>
</tr>
<tr>
<td>1-6 years</td>
<td>85</td>
<td>67 (78.8%)</td>
<td>8 (9.4%)</td>
<td>0</td>
<td>2 (2.3%)</td>
<td>8 (9.4%)</td>
</tr>
<tr>
<td>7-18 years</td>
<td>52</td>
<td>9 (17.3%)</td>
<td>1 (1.9%)</td>
<td>1 (1.9%)</td>
<td>3 (5.8%)</td>
<td>38 (73.1%)</td>
</tr>
<tr>
<td>19+ years</td>
<td>20</td>
<td>13 (65%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>7 (35%)</td>
</tr>
</tbody>
</table>