

Abstract

Multiple Varicella Outbreaks on Cruise Ships Belonging to the Same Company †

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1. Introduction

Transmission of infectious diseases on passenger ships is a well-known fact and efforts have been made to fight against it for years. Varicella is a highly contagious disease that spreads easily to people who haven't had the disease or been vaccinated. It's normally a mild disease, but it can lead to complications such as bacterial infections, pneumonia, or encephalitis, especially in adults. The vaccine is safe, and it is an effective way to prevent the disease and its complications.

Foreign Health (FH) is the competent authority at Spanish points of entry. It is an exclusive competence of the state and is composed of 28 units located at international ports and airports with qualified medical doctors and nurses coordinated at the central level by the Deputy Directorate of Foreign Health (DDFH), which belongs to the Ministry of Health. FH is responsible for IHR implementation at Spanish points of entry and responds in a coordinated way to public health events at Spanish borders, applying the same procedures in every port and airport.

The goal of this abstract is to present multiple varicella outbreaks that affected several passenger ships belonging to the same company throughout 2008, as well to emphasize the need for having a good communication system among ports.

2. Materials and Methods

We reviewed the actions taken by Spanish ports and the coordination activities implemented from the DDFH, at both national and international levels. Data were obtained from the reports sent by the port health authorities to the DDFH as part of the protocol established to jointly respond to public health events at Spanish points of entry. Data collected included the following: name of the ship, number of cases (crew or passengers), sex, median age, country of origin, and job position on board. The outbreaks involved several Spanish ports that responded in a coordinated manner under the direction of the DDFH at the central level. Actions taken by authorities from other countries were not analysed.

3. Results

Between February and November 2008, eight varicella outbreaks took place on five different ships belonging to the same company. All of the ships travelled in the Mediterranean Sea except two of them, which visited north European countries. Five Spanish ports and 10 European ports were involved.

A total of 28 cases were reported (22 males and 6 females). Median age was 25.4 years. All were crew members and 18 came from Southeast Asian countries, mainly from Philippines and Indonesia. Fifteen worked as waiters and the rest worked in other areas of the ships. The first case was notified in February in Malaga. During April and May, five more cases were notified on two ships in Barcelona and Palma. The largest outbreak took place in May, when a single cruise reported 12 cases to four ports. Seven more cases were notified during summer cruises to Tenerife, Alicante, and Malaga on three ships. Finally, three more cases on a single ship were reported in November in Tenerife.

FH inspectors conducted the inspections. All the cases were isolated in their cabins since the beginning of the disease and suffered from mild symptoms without complications. None required disembarkation for medical care ashore. Blood, pharyngeal, and blister samples were taken to confirm the infection. The results were positive for varicella in all the cases analysed. FH provided the masters with the same recommendations in all cases, including close contacts vaccination. Throughout the whole outbreak, the total number of people vaccinated reached 420 among the approximately 5200 crew members on all the ships.

All the incidents were reported from the DDFH to the next ports of call, in other countries, through the Consulate authorities. Furthermore, the main event was also notified by using the Early Warning and Response System (EWRS).

No further cases were notified after November and the outbreak was considered closed.

4. Discussion and Conclusions

Varicella is a vaccine-preventable disease caused by the varicella-zoster virus. It is highly contagious to people who haven't had the disease or been vaccinated. The rash appears 10–21 days after exposure and lasts about 5–10 days. Lesions typically appear in different stages at the same time (bumps, blisters, and scabbed lesions). It can spread through direct contact with the rash and through air droplets. The virus is contagious for up to 48 hours before the rash appears and remains contagious until all broken blisters have crusted over. The vaccine is a safe and effective way to prevent the disease and its possible complications. There is no evidence of vaccine-associated adverse events when vaccination is administered during the incubation period. Immunoglobulin should be used in people at higher risk for severe disease (immunocompromised, neonates from mothers with varicella, and pregnant women). The majority of adults in Europe are naturally immune to varicella (up to 90% in the age group over 20 years). However, in tropical regions, infections occur at a later age.

FH inspectors at all Spanish ports provided the masters of the ships with the same recommendations, in accordance with the European Centre for Prevention Diseases and Control (ECDC):

- Isolate patients in their cabins or at the medical facilities.
- Inform passengers and crew about the outbreak, the risks, and preventive measures.
- Vaccinate close contacts with special care to those with chronic diseases or pregnant women.
- Inform the competent authorities upon arrival at every port about the situation on board and the measures taken.
- Actively surveillance for new cases.

All the events were similarly managed by the European port health authorities thanks to communication between countries. Nevertheless, in 2008 there were no specific ways to communicate events on ships between ports and communications were carried out using parallel systems such as the EWRS or the Consular authorities. Those systems were not appropriate for communicating these events, as many of them did not meet the required criteria. This brought to light the importance of having a specific system that allows port health authorities to rapidly communicate information about public events on ships.

The outbreak was reported in a SHIPSAN meeting that was held in Athens with the participation of experts on public health on ships. It was the basis for discussion of the need for a common and coordinated approach to respond to outbreaks on ships. The need for common hygiene standards on ships and a specific communication system for ports was identified. For this purpose, SHIPSAN developed the EU SHIPSAN INFORMATION SYSTEM (SIS), which contains a useful component for communication.

The interest in this outbreak lies in the fact that a number of crew members were transferring among ships of the same company during their incubation period, transferring the disease from ship to ship and infecting other crew members. Vaccination of contacts was the key to breaking the transmission chain.

In conclusion, public health events on ships sailing in European waters should be managed in a coordinated way at both national and international levels. To do so, countries should use common standards and appropriate communication routes. The SIS is a suitable tool to achieve that goal. We recommend the use of the tools developed by SHIPSAN-HEALTHY GATEWAYS, especially the SIS. Efforts to promote its use should be made by European countries and organisations.

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