



Influenza epidemiology in hospitalized patients with flu-like symptoms

Nitsch-Osuch A¹, Kuchar E², Załęski A², Rykowska D², Szwejkowska M²

¹Department of Social Medicine and Public Health, Medical University of Warsaw, Poland

²Department of Pediatrics with Clinical Assessment Unit, Medical University of Warsaw, Poland

Site presentation

The Public Pediatric Clinical Hospital is one of six teaching hospitals affiliated to the Medical University of Warsaw. The University provides general and specialty training at both undergraduate and postgraduate levels. The students and staff are also involved in a number of clinical academic departments located in other hospitals.

The Public Pediatric Clinical Hospital is not assigned to the catchment area. It is located in Warsaw (1.8 mln population) in one of the densely crowded districts (ca. 100 thou. population), in a distance of around 2 km from the city center. The hospital-based surveillance network helps evaluating the burden of severe influenza disease.

Methods

All enrolled patients fulfilled inclusion criteria: admission to hospital with ILI symptoms (selection of chart reviews and medical records of all patients admitted to the hospital within past 48 hours), written permission of parents for taking swabs.

Nasopharyngeal swabs were obtained from patients. All samples were kept at -20°C until were sent to reference laboratory. Multiplex Real-Time PCR was performed on the samples to detect the presence of influenza A (H1N1n and H3N2), influenza B (B/Yamagata, B/Victoria). Following materials were used: Nylon Flocked Dry Swabs in peel pouch (Pediatric Flocked Swab, Nylon Tip, Plastic Applicator, Sterile, Cat no: 516CS01, Copan, Italy), Medium without Swabs (12 x 80 mm Screw Cap Tube, 1ml of UTM Transport and Preservation Medium, Cat no: 350C, Copan, Italy). Laboratory procedures included: Multiplex RT-PCR performed to detect the presence of influenza A and influenza B - Xpert® Flu, CE-IVD tests, conventional RT-PCR assays for the detection of influenza AH1N1, AH3N2, influenza B lineage-specific one-step conventional RT-PCR for detection influenza B/Yamagata and B/Victoria. Protocols for RT-PCR detection and subtyping of influenza complied to "WHO information for molecular diagnosis of influenza virus - update".

(http://www.who.int/influenza/gisrs_laboratory/molecular_diagnosis_influenza_virus_humans_update_201403rev201505.pdf?ua=1)

Results

Figure 1 : Laboratory confirmed cases of influenza virus infections and strains of influenza virus isolated in the 2017/2018 epidemic season in Poland

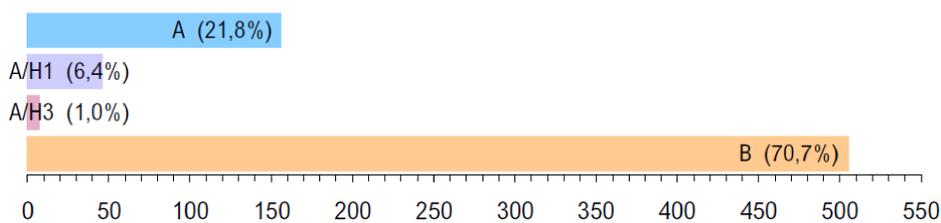


Figure 2 : Included patients by age and gender

■ Female ■ Male

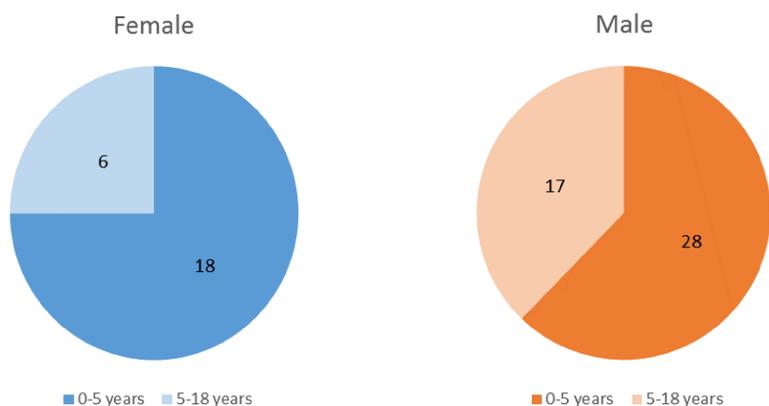


Figure 3 : Virus distribution by gender

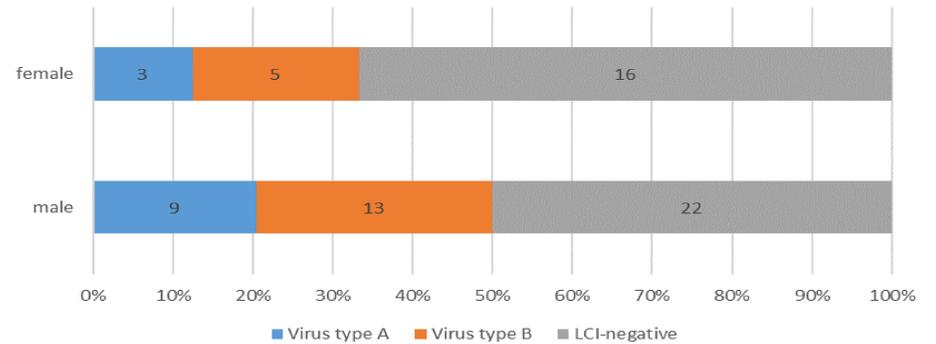


Figure 4 : Virus distribution by age

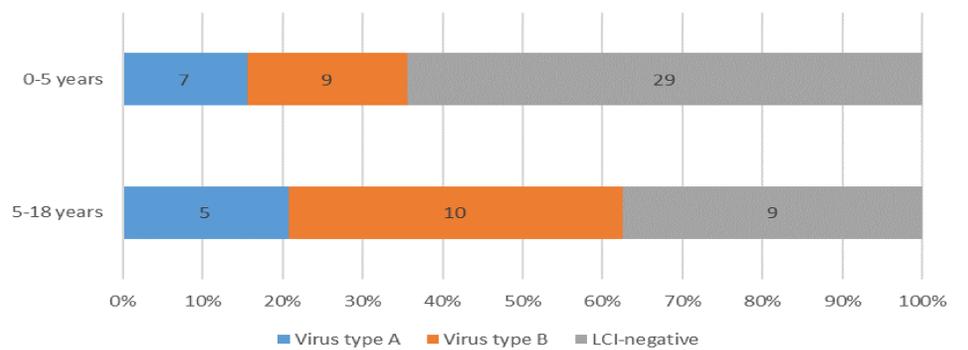


Figure 5 : Influenza vaccination status for included patients

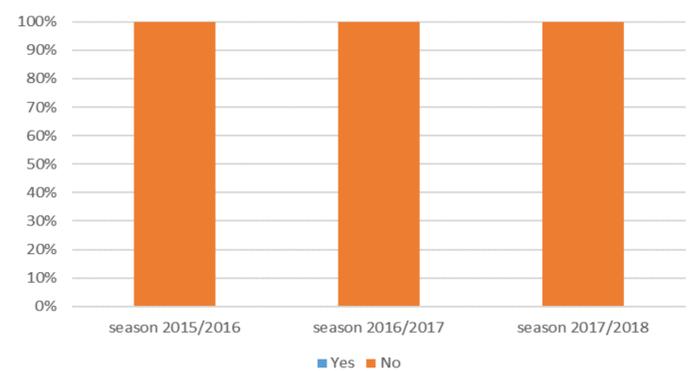
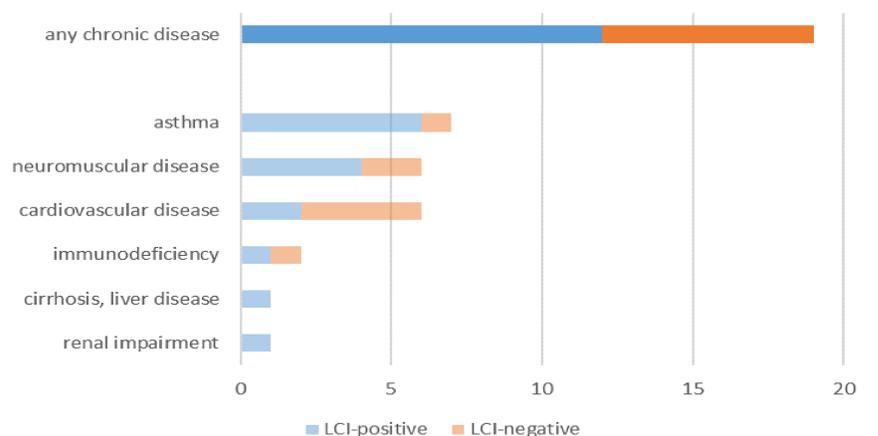


Figure 6 : Patient and virus distribution by chronic condition



Key aspects & challenges

The incidence rate of influenza in patients included into the study was 44%. Out of all influenza cases 80% were caused by B virus, Yamagata line. The epidemiological situation of influenza in study group was comparable to this one reported in Poland.

- Late onset of laboratory testing was related to logistic and legal disturbances and barriers and resulted in low number of included patients (January patients were missed).
- The study was limited only to one site (pediatric patients).
- In 2018/2019 the study will be continued among pediatric patients (purchase orders will be made in November, costs will be mainly covered by the University).
- Problems with data extraction from GIHSN site (available data of 27 instead of 71 patients).

Contact: anitsch@wum.edu.pl, ernest.kuchar@gmail.com

Funding: