The tendency to increase of influenza A(H3N2) and B(Vic) viruses percentage was observed among children by age. RSV infected more frequently young children aged 0-2 and 3-6 yrs. MPV infection was registered mostly in young children and elderly patients.

Influenza A(H3N2), B(Vic) and RSV prevailed in 2016-2017 season. Percentage of patients infected by influenza B virus was the highest in adults (p<0.001) and by RSV – in children (p<0.0001). Rhinovirus was the significant causative agent of admission in all age groups (p<0.0001).

Age dependent rate of influenza and other ARI agents in hospitalized patients

Results

SAINT-PETERSBURG GIHSN SITE’S EXPERIENCE AND RESULTS OF 2016-2017 SEASON

A total 53 ICU patients (98% children). The most often causative agents were RSV (11 cases), RVH (10 cases) and A(H3N2) viruses (7 cases). One child (2 months) with RVH died.

Percentage of patients with co-morbidity among influenza positive in 2016-2017 season was lower compared to 2015-2016 season excluding asthma, which together with chronic neuro muscular disease was the most often (p<0.0001).

Influenza vaccination is included in the National Calendar of Vaccination and paid from Federal Budget. “Soviavir”, “Gripovit” and “Ultrix” vaccines were mainly used for immunization in Russia (about 47 mln doses). Other vaccines available in the country: “Vaxigrip” (Sanofi Pasteur), “Begivac” (Navarits), “Fluvirix” (SmithKline Beecham), “Influvac” (Abbott) etc. The number of vaccinated among hospitalized in GIHSN study in 2016-2017 season was 85 (4.4%) patients. Among them 31 (36.5%) patients were influenza positive.

76 pregnant women were included in GIHSN study additionally. Significantly higher rate of flu positive cases was observed among pregnant women compared to the adjusted control group of non pregnant (p<0.01). Influenza B virus was detected in pregnant women more often (35.5%) compared to other respiratory agents and RVH infection was registered in 13.2% of pregnant women.

According to HA gene phylogenetic analysis influenza A(H3N2) viruses were represented by clade 2c2a and genetic subgroup 2c2a.1 (39%). Most of the aa substitutions in viruses of 2c2a clade occurred in antigenic site A. The most affected genetic and antigenic analysis; 

Key aspects & challenges

1. High proportion of young children (46.6%) and low proportion of elderly patients (1.1%) in St. Petersburg site (p<0.0001);
2. Influenza epidemic of the 2016-2017 season caused by A(H3N2) and B(Vic) viruses (p<0.001) and characterized by early start, moderate intensity and prolonged duration in both St. Petersburg and in the whole country;
3. Last season influenza A and B viruses matched the vaccine strains by results of surveillance enhancement and influenza vaccines effectiveness estimation; 
4. Risk factors for hospitalization in adults were cardiovascular diseases caused by influenza A(H3N2) virus and in children chronic neuromuscular disease caused by RSV, RVH or influenza A(H3N2) virus.
5. 31 influenza positive cases were detected among 85 vaccinated patients.

Challenges: Expansion of geography of GIHSN study in the country for future surveillance enhancement and influenza vaccines effectiveness estimation; Development and evaluation of new approaches for IVE estimation.

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