

Paediatricians approach to prescribing of systemic antibiotics in outpatient children with respiratory infections in Russia

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OBJECTIVES

Systemic antibiotics (sAB) are commonly administered to children in primary care facilities in Russia and respiratory infections (common cold, tonsillitis, acute otitis media, etc.) amount to 80% of indications (Baranov A.A., Stratchounski L.S., 2007). Inappropriate sAB prescriptions lead to significant rise in antimicrobial resistance. We aimed to assess paediatricians knowledge and approach to sAB prescribing in outpatient children with respiratory infections in different regions of Russian Federation.

METHODS

A questionnaire survey of primary care paediatricians from 17 cities of Russian Federation (Barnaul, Blagoveshchensk, Bryansk, Ekaterinburg, Kaluga, Kazan, Moscow, Nizhny Novgorod, Novokuznetsk, Novosibirsk, Omsk, Rostov-on-Don, Samara, Smolensk, St. Petersburg, Vladivostok, Voronezh) was performed (Pic. 1). The data were analyzed using descriptive statistics.

RESULTS

A total of 701 paediatricians (mean age 46.3±10.7, 61.5% with work experience >15 years) took part in the survey. *S. pneumoniae* (50.9%), *H. influenzae* (16.8%), viruses (13.2%) and *M. pneumoniae* (11.6%) were named among the most common pathogens of community-acquired pneumonia in children older than 1 year (Pic. 2), while *H. influenzae* (26.4%), *S. aureus* (23.8%), *S. pneumoniae* (22.3%) and viruses (18.3%) - of acute otitis media (Pic. 3). It should be noted that only 70.9% of respondents reported otoscopy to be a part of diagnostic process in children with acute otitis media. Other means to diagnose the infection included past medical history and clinical signs (80.7% of respondents) and results of laboratory tests such as blood test (21.7%).

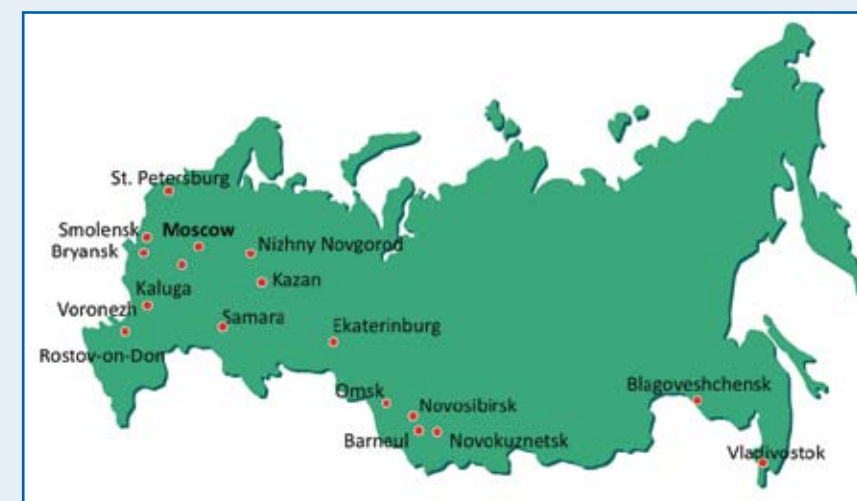
S. pyogenes was correctly chosen as the most common acute tonsillitis bacterial pathogen by only 50.7% of respondents, whereas *S. aureus*, Epstein-Barr virus, *S. pneumoniae* or *H. influenzae* was reported to be the top pathogen in 26.4%, 8.5%, 7.4% and 6.8% of cases, respectively (Pic. 4).

The vast majority of respondents (94.9%) declared they didn't generally prescribe sAB for common cold. At the same time 93.6% of them approved sAB prescription in children with complicated common cold.

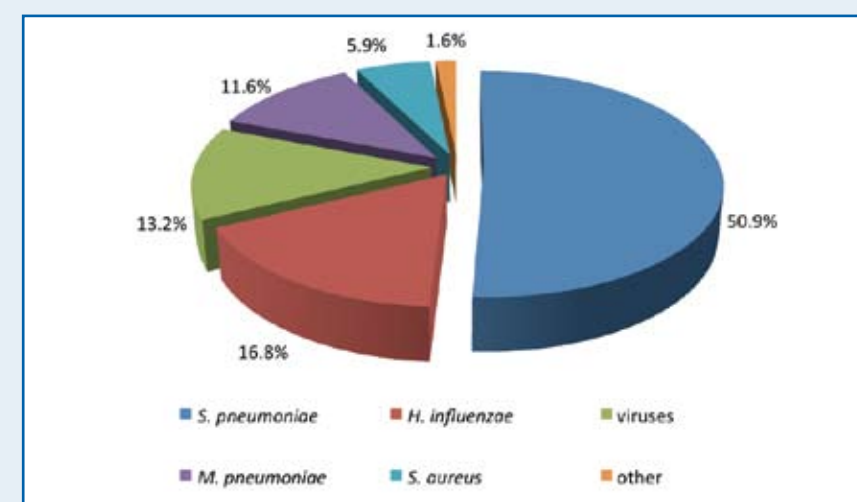
Drug preferences of respondents for respiratory infections that require systemic antibacterial therapy are listed in table 1. In the vast majority of cases either penicillin or macrolide was chosen for systemic antibacterial therapy of outpatient children with respiratory infections: 63.5% and 34.1%, respectively, in community-acquired pneumonia, 75% and

8.3% in acute tonsillitis, 75.1% and 23.9% in acute otitis media, 72.6% and 26.3% in acute rhinosinusitis. At the same time up to 95% of respondents declared antimicrobial resistance to be a significant problem in their clinical practice.

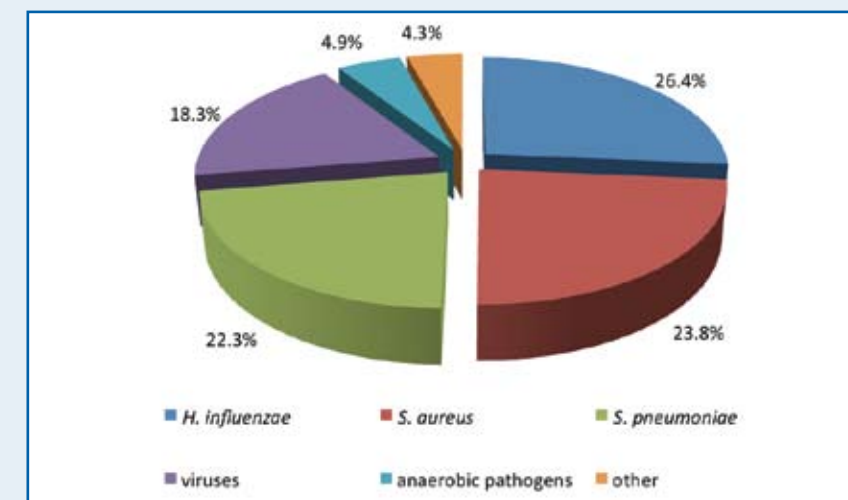
Expected clinical efficacy (87.4% of respondents), possibility of oral administration (64.6%), safety issues (62.6), evidence base (59.3%), position in clinical guidelines (50.6%) and frequency of administration (44.4%) were commonly mentioned as criteria of sAB choice in paediatric practice (Pic. 5). Influence of parents was significant with episodic (73.6% of respondents) or frequent (15.7%) demand for sAB. Post-graduate courses (81.3% of respondents), pharmaceutical sales representatives (80.3%), medical conferences and other events (74.9%) and specialized literature (67.8%) were named among the sources of information about sAB by the majority of respondents (Pic. 6).



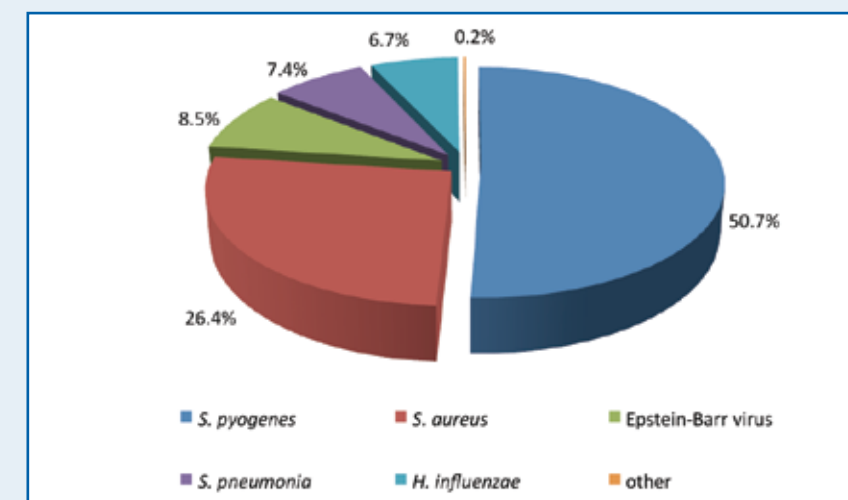
Picture 1. Geography of PATRIOT Project



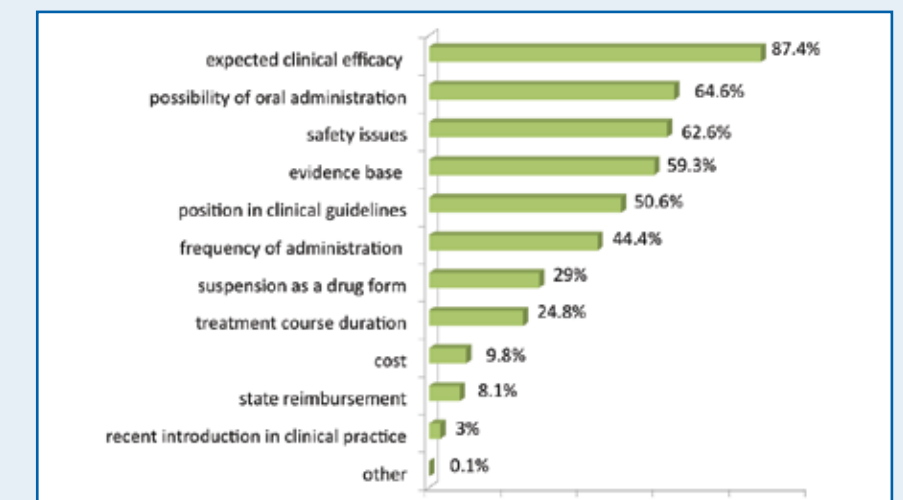
Picture 2. Respondents' opinion about the main pathogens of community-acquired pneumonia in children older than 1 year



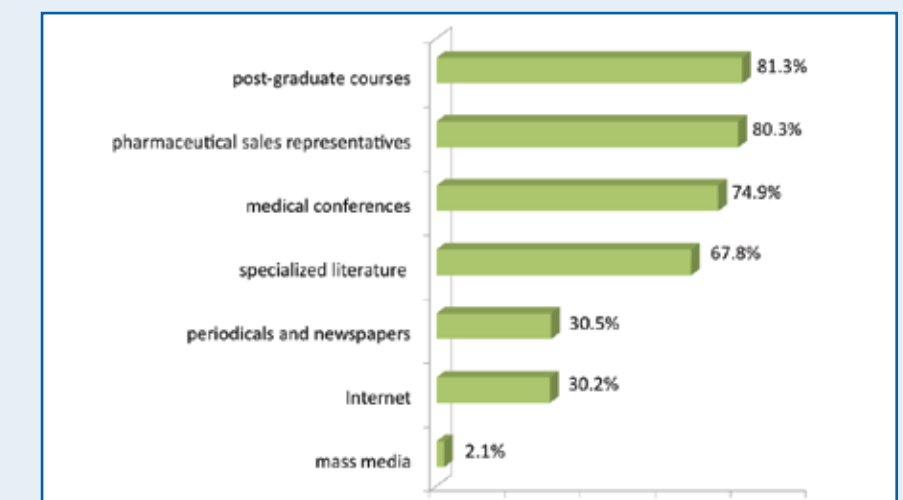
Picture 3. Respondents' opinion about the main pathogens of acute otitis media in children



Picture 4. Respondents' opinion about the main pathogens of acute bacterial tonsillitis in children



Picture 5. Respondents' opinion about the main criteria of sAB choice in paediatric practice



Picture 6. Sources of information about sAB for primary care paediatricians in Russia

Table 1. sAB administered to children with respiratory infections in primary care in different cities of Russian Federation, %

Drug	Community-acquired pneumonia	Acute tonsillitis	Acute otitis media	Acute rhinosinusitis
Amoxicillin/clavulanic acid	45.9	39.5	48.2	46
Amoxicillin	14.5	24.9	25.3	24.3
Azithromycin	22.1	16.3	17.2	17.6
Clarithromycin	5.9	3.7	3.9	4.4
Josamycin	5.1	4.2	2.5	3.9
Penicillin V	1.5	6.9	1	1.4
Penicillin G	1.6	3.7	0.67	0.8
Other	3.4	0.8	1.23	1.6

CONCLUSIONS

Overestimated etiological role of *S. aureus* in bacterial tonsillitis and acute otitis media, lack of specificity in treatment approach to different respiratory infections, possible negative influence of pharmaceutical companies and common parental demand for sAB are the main problems revealed. Paediatricians knowledge and approach to sAB use in respiratory infections require corrections through educational and administrative actions nationwide to improve prescribing practices in our country.