

## Increase of Inappropriate Use of Antibiotic among Children – How We Can Help in Pharmacy

*Inga Urtane<sup>1</sup>, Sheroza Irismetova<sup>2</sup>*

*Rīga Stradiņš University, Latvia*

*<sup>1</sup>Department of Pharmaceutical Chemistry*

*<sup>2</sup>Faculty of Pharmacy*

**Introduction.** Antibiotic resistance is a growing problem especially among children due to lack of parents' knowledge about its use. It can be reduced by finding out primary difficulties regarding utilization in such cases as disease conditions, preparation, storage and choice of drink.

**Aim, Materials and Methods.** The aim of the study is to analyze the more common mistakes made by the parents during antibiotic treatment in children.

Prospective quantitative study was conducted from December 2016 to January 2017 in Kazakhstan and Latvia. The data such as age, gender, location, illness conditions, experience with suspension usage was obtained by an anonymous questionnaire.

**Results.** Data was collected from 100 parents (50 from Kazakhstan and 50 from Latvia), mean age was  $31.4 \pm 4.8$  years. The majority were women (72 %) with similar proportion between countries, 35 % vs. 37 %, respectively. Using independent samples t-test, it was found that the average number of children between countries differed statistically significant – for Kazakhstan  $2.6 \pm 1.1$  and for Latvia  $1.4 \pm 0.5$  ( $t = 7.03$ ;  $p < 0.01$ ). More than half of the parents experienced antibiotic usage (66 %). It was seen that parents in Kazakhstan were likely to give antibiotics to children in comparison with negative attitude to it, 39 % vs. 11 %, respectively ( $p = 0.021$ ). Taking Latvian population, there was no significant difference between usage, 27 % vs. 23 %, accordingly.

Most inappropriate usage of antibiotics was observed in cases such as flu (59.1 %), cold (31.8 %) and cough (28.8 %) in both countries. The data showed that cold and cough were treated twice frequently in Kazakhstan than in Latvia (21.2 % vs. 10.6 % and 19.7 % vs. 9.1 %). Nearly half of the study population (48 %) had experienced antibiotics in the form of suspension. Most common mistakes were performed by choice of solvent (53 %), volume of solvent (25.8 %), shaking of prepared suspension (9.1 %). More than half of the total study parents stored ready suspension in room temperature rather than in fridge (59.1 % vs. 40.9 %;  $p = 0.012$ ). There was a representative difference among beverages such as tea and carbonated drinks compared to still water and juice (25.7 % vs. 74.2 %;  $p = 0.007$ ).

**Conclusions.** One of the reasons of inappropriate use of antimicrobial agents was lack of parent's knowledge on adequate antibiotic treatment for their children. Most of the population had been giving antibiotics to their children in conditions such as flu in both countries when it was not necessary. Mistakes in suspension preparation, storage conditions and use of inappropriate beverages could affect the pharmacokinetics and action of antibiotic active substance.

