

## USE OF ANTIBIOTICS IN PAEDIATRICS, WHAT PARENTS THINK

Simona Dumitra<sup>1</sup>, Liana Precup<sup>1</sup>, Daniela Râpan<sup>1</sup>, I Precup<sup>1</sup>,  
Andreea Radu<sup>1</sup>, Sabina Morgovan<sup>1</sup>, D Lazăr<sup>1</sup>

### Abstract

*Background* – The exaggerated use of antibiotics led to high rates of antibiotic resistance in our geographical area. *Objective* – to map the parents' attitudes and their knowledge regarding the antibiotic therapy in Paediatrics. *Materials and methods* – A questionnaire was used, comprising 20 questions that would probe the parents' attitude towards the introduction of antibiotic therapy, the criteria for introducing the antibiotic therapy, the frequency of antibiotic consumption in the family, elements of antibiotic resistance, the frequent consumption of antibiotics, etc. 500 parents of children admitted to the Paediatrics Clinic of the Arad County Hospital answered the questionnaire and the data were analysed statistically by the SPSS 10 software. *Results and discussions* – the parents consider that the antibiotic reduces the fever and that it must be introduced against the fever. The parents introduce the antibiotic following advice from unauthorized persons and sometimes administer the therapy at their own initiative. *Conclusions* – The questionnaire highlights the lack of medical education in a large percentage of parents. A large proportion considers the main effect of the antibiotics to be hypothermal. Quality sanitary education is a must, through mass-media campaigns and school workshops.

**Key words:** antibiotic resistance, antibiotic therapy, sanitary education

### Introduction

The treatment of bacterial diseases has entered a new stage with the discovery of antibiotics. They were initially regarded as a true universal panacea that can solve any type of bacterial infection. Their abusive use have led to a serious phenomenon called antibiotic resistance, which is natural or an acquired ability of a microorganism to withstand the effects of one or more antibiotics (1, 2,3).

Research of the phenomenon of antibiotic resistance is a permanent activity for the most modern laboratories and research centers worldwide. To avoid this phenomenon go out of control, there were introduced stringent preventive measures but, also, produced new antibiotics which provided to clinicians an effective treatment and a modern solution.

Because the antibiotic resistance is a phenomenon which resemblance with a devastating avalanche, the question is put to empower and aware users and traders of antibiotics so they are used only after a proper scientific advice, argued for a biological criteria and not a random one.

In this sense, it was designed and submitted all information provided by research institutes through the media, Internet, magazines, newspapers or other documents and were made available to the public through special programs of medical information.

What is the result of this information? What is the information that a parent has in relation to antibiotics administered to the child which he has under care?(4,5,6,7,8,9,10,11).

What are the most common mistakes that are related managing antibiotics and how they can be corrected? What is the information gap and how it should be corrected? (4,5,6,7,8,9,10,11).

### Objective

In our study, we sought to emphasize parents attitude and knowledge about antibiotics and antibiotic resistance and to outline factors related to self medication.

### Materials and methods

It was designed a questionnaire with 20 questions focused on parents attitude towards the introduction of antibiotics in treatment of children, self-medication, antibiotic entry criteria, knowledge of doses and treatment period, the source of information, the result of antibiotic therapy, knowledge of the concept of antibiotic resistance, who prescribed the treatment and how it was obtained (with or without a prescription or purchased stock in the house); with these data it was analyzed the profile of respondents (residence, education level, age of parents and children, the affection of children, fear related to the occurrence of complications and hospitalization. There were interviewed a total of 500 parents of children hospitalized in the Clinic of Pediatrics Arad County Emergency Hospital, aged between 1 and 18 with acute diseases which required antibiotics, from January to April 2011, data being statistically processed.

<sup>1</sup>Department of Pediatrics, Vasile Goldiș Western University of Arad

E-mail: dumitrasimona@yahoo.com, precup\_1\_d@yahoo.com, daniela\_ripan\_elisabeta@yahoo.com, precup\_1\_d@yahoo.com, hadassa4yh@yahoo.com, sabina\_myx@yahoo.com, dorinlazar@ymail.com

## Results and discussions

Results obtained after statistical processing outlined the following:

1. Respondents residing in urban areas 282 cases (56.4%) and 218 (43.6%) in rural areas, no significant differences in percent balance;

2. Education level of parents of respondents were: enrolled: 12 cases (2.4%), less than 8 grades, 292 cases (58.4%) were high school, 107 cases (21.4%), higher education 89 cases (17.8%), the highest percentage is recorded by parents who have secondary education;

3. Age of children treated ranged from 1-3 years: 214 cases (42.8%) 4-10 years 230 cases (46%), and more than 10 years 56 cases (11.2%); the group between 1 and 3 years is with a higher vulnerability in terms of illness especially in winter-spring;

4. In principle, parents do not agree with the introduction of antibiotic therapy only when strictly necessary: 482 (96.4%) versus 18 (3.6%) didn't consider as dangerous the use of antibiotics for their child. This high percentage of parents who responded that they have a firm stance against antibiotics should give us some satisfaction in terms of their conviction.

5. The question towards the administration of antibiotics to their own children at least once in life, without medical advice, 412 (82.4%) responded affirmatively, compared to 88 (17.6%) who denied this;

6. The criteria behind the decision of parents to treat children on their own initiative with antibiotics were: for fever 318 (77.18%) and cough 94 (22.81%);

7. Doses administered by parents, without medical advice, adjusted to the age and weight of children in 283 cases (68.68%), compared with 28 (6.79%) who received a dose lower than the normal child.

8. Duration of administration of antibiotics, without medical advice, was 1-2 days in 274 cases (66.50%), 3-5 days in 130 cases (31.55%) and less than 5 days in 8 cases (1.94%). High percentage of cases who stopped antibiotics after symptoms improved in 1-2 days could prove that the antibiotic was not necessary, although it is difficult to assess retrospectively;

9. Source of information for parents for administrating medication to children was the internet in 58 cases (14.07%), entourage in 102 cases (24.75%) and previous experience in 252 cases (61.16%), all 252 cases were treated with the same antibiotic that the child received at the last visit to the doctor, which is correlated with the fact that, although the choice of antibiotic can often be inappropriate for the child condition, however, parents rarely get the wrong dose because of a recent past experience;

10. In self-medication, diseases treated had a favorable outcome in 321 cases (77.91%) and unfavorable in 91 cases (22.08%), these cases requiring medical intervention; favorable evolution in a significant percentage makes us

believe again that many viral diseases are treated with antibiotics, in the wrong way;

11. The first motivation for the introduction of antibiotics to treat the condition of the child was fear of complications and hospitalization in 482 cases (96.4%);

12. Of all respondents, the concept of antibiotic resistance was unknown, exactly in 276 parents (52.2%), while 224 (44.8%) have heard about this phenomenon. The percentages are similar and contrasts with the high percentage of parents who are against the administration of antibiotics to those who do not have a strong opposition;

13. Anamnesis revealed that the patient received antibiotic treatment for the condition which required hospitalization, current treatment being recommended by the family doctor in 172 (34.4%) cases, 111 cases by pediatric specialist (22.2%), pharmacist 103 cases (20.6%) and 114 cases (22.8%) antibiotics were administered on its own initiative; again, in response to the high percentage recorded "from initiative" which contrasts with that of the general beliefs;

14. Diagnosed disorders that were treated with antibiotics from the recommendation of the physician and from its own initiative were: bronchitis 291 (58.2%), laryngitis 88 (17.6%), pneumonia 62 (12.4%), enteritis 7 (1.4%), otitis 52 (10.4%);

15. The data obtained clinically, paraclinically and from biological laboratory results at hospitalization were found 201 cases of bronchitis that would not have required treatment with antibiotics, 51 cases of laryngitis and 12 cases of otitis.

## Conclusions

Survey shows lack of certainty and a difference between informal medical education of a large percentage of parents and how to action when are confronted with their children disease.

Parents require from the pharmacist for an advice for a recommended antibiotics or administrates on its own the antibiotics from the entourage advice or after previous experience.

Antibiotics continue to be administered for symptoms such as fever or cough.

The favorable evolution of some cases who received antibiotics for a short period of time may encourage parents practice, they being convinced that the antibiotic may have not been necessary but they have successfully treated their children.

It requires a sustained and continuous health education, spreading information materials through the media and organized workshops at school sites to train from early age and have strong skills to work outside the subjectivity related to their child illness. It should also ban the marketing of antibiotics in pharmacies at the request of patients who do not have prescription, with sanctions for not following these decisions.

## References

1. Dumitra S. *Rezistența la antibiotice a enteropatogenilor – istoric, cauze, situația în România, soluții*, Jurnalul Medical Aradean, an IX, nr.3, sept 2006
2. Dumitra S. *Antibioterapia în boala diareică acută bacteriană la copil*, Jurnalul Medical Aradean, anul X, sept 2007, pg 13-20

3. Dumitra S, Sabău I, Stănescu D, Oprea D, Morgovan S, Precup L, Lazăr D. *Clinical predictive factors in acute bacterial diarrhea* in Abstract Book of 27 th annual meeting of the European Society for Paediatric Infectious Diseases ESPID, 2009, Bruxelles, pg 62
4. Halfvarsson J, Heijne N, Ljungman P, Ham MN, Holmgren G, Tomson G. *Knowing when but not how! - mothers' perceptions and use of antibiotics in a rural area of Viet Nam*. Trop Doct. 2000 Jan; 30 (1): 6-10
5. Madsen KA, Bennett JE, Downs SM. *The role of parental preferences in the management of fever without source among 3 - to 36-month-old children: a decision analysis*. Pediatrics. 2006 Apr; 117(4): 1067-76
6. Mangione-Smith R, McGlynn EA, Elliott MN, Krogstad P, Brook RH. *The relationship between perceived parental expectations and pediatrician antimicrobial prescribing behavior*. Pediatrics, 1999 Apr; 103(4 Pt 1): 711-8
7. Mangione-Smith R, Elliott MN, Stivers T, McDonald LL, Heritage J. *Ruling out the need for antibiotics: are we sending the right message?* Arch Pediatr Adolesc Med. 2006 Sep; 160 (9): 945-52
8. Mangione-Smith R, Elliott MN, Stivers T, McDonald L, Heritage J, McGlynn EA - *Racial/ethnic variation in parent expectations for antibiotics: implications for public health campaigns*. Pediatrics. 2004 May; 113(5):e385-94.
9. Sorum PC, Shim J, Chasseigne G, Mullet E, Sastre MT, Stewart T, Gonzalez-Vallejo C. *Do parents and physicians differ in making decisions about acute otitis media?* J Fam Pract. 2002 Jan; 51 (1): 51-7
10. Stivers T, Mangione-Smith R, Elliott MN, McDonald L, Heritage J. *Why do physicians think parents expect antibiotics? What parents report vs what physicians believe*. J Fam Pract. 2003 Feb; 52 (2): 40-8
11. Buñuel Alvarez JC, Fortea Gimeno E, Cortés Marina RB, Vila Pablos C, Blanch Risec F, Estany Delgado M. *Antibiotic use in primary care. Do we know what parents think?* An Pediatr (Barc), 2004 Oct 61 (4): 298-304

Correspondance to:

Dumitra Simona,  
 Clinica de Pediatrie Arad,  
 Victoriei 1-3,  
 310158,  
 Arad  
 România  
 E-mail: dumitrasimona@yahoo.com