

أستعراض لاستعمال وسوء أستعمال المضادات الحيوية... أ. مبروكة عمرو جمعه شريحه
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استعراض لاستعمال وسوء استعمال المضادات الحيوية في الأطفال ووجهة نظر الآباء في استعمال المضادات الحيوية في مدينة الزاوية

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سوء استخدام المضادات الحيوية في الوقت الحالي يعد من المشاكل الصحية التي تواجه قطاع الصحة على المستوى الدولي و يزيد من تكلفة الخدمات الصحية باعتبار أنّ الاستعمال السيئ للمضادات الحيوية يؤدي إلى مقاومة البكتريا للمضادات الحيوية ، و عدم فاعليه الأدوية في علاج الأمراض المزمنة وكذلك ظهور الأعراض الجانبية للمضادات الحيوية بشكل أكثر خطورة . والجدير بالذكر أنّ هناك عدة عوامل قد تؤذي وتدعم سوء استخدام أو كثرة استعمال المضادات الحيوية في المجتمع الليبي ، لهذا تستعرض الدراسة الحالية وجهة نظر الآباء عن كيفية استخدام المضادات الحيوية لأطفالهم في مستشفى الزاوية لمدة أربعة اشهر (2012/2011)، من خلال تحليل معلومات وسلوك وممارسات الآباء في استعمال المضادات الحيوية لأطفالهم. بعض البيانات جمعت وأخذت من وصفات الأطفال المرضى حيث تم تجميع 200 وصفة طبية كدراسة مرجعية و تم تحليل النتائج ببرنامج احصاء مايكروسوفت اكسل. وقد أظهرت النتائج المتحصل عليها أنّ 99% من الوصفات أعطي فيها مضادات حيوية من غير إجراء مزرعة لتحديد نوع البكتريا ونوع المضاد الملائم لها. 67% من الآباء لا يحتفظون ببواقي المضاد الحيوي لاستعماله مرة أخرى. 66% من المستجوبين لا يعطون المضاد لأطفالهم في الوقت المحدد وأيضاً 51% من الآباء لا ينهون المدة المحددة للمضاد نتيجة تحسن الطفل في الأيام الثلاث الأولى. من خلال هذه الدراسة كان هدفنا تسليط الضوء حول

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استعمال المضادات الحيوية في المجتمع الليبي في مدينة الزاوية من خلال استجواب المرضى و أولياء أمورهم لأنَّ المريض وأهله يعتبرون جزء مهماً في إساءة استعمال المضادات الحيوية من خلال سؤال الآباء عن طريقة استخدام وحفظ المضادات لأبنائهم.

ABSTRACT

Antibiotics misuse is currently one of the major public health issues worldwide. This misuse lead to the development of bacterial resistance, increasing the burden of chronic diseases, rising costs of health services and the development of side effects. Several factors may influence this pattern of overuse. A questioner review on antibiotic use and misuse in children in Al-zawiya hospital, Libya during a period of four months (2011/2012). Through this study, we aim to analyses the knowledge, attitude and practices of antibiotics use among parents of children. Some data were collected retrospectively from inpatient prescriptions (200 prescriptions studied). The data then was evaluated by Microsoft Excel software for analysis and descriptive statistics. About 99% of patients given an antibiotics without culture sensitivity tests (c/s). About 67% of the parents did not keep the antibiotic remaining for a second use. Around 66% of the total reviewed parents did not give their children the antibiotic in the exact time. 51% of the parents did not finish the antibiotic course to the exact duration.

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In this study we aimed to provide the prescribers with information about the use of antibiotics in the Alzawia community as the patients represent a significant source of antibiotic misuse in the community. Therefore we evaluate patient contribution in antibiotic use, we questioned 200 parents about the rational use of the antibiotics in children. In addition, this also helps physicians to have a more precise idea about prescriptive patterns prevalent in the Libyan community.

Keywords: Antibiotics overuse, Bacterial resistance, Pediatrics, Questionnaire, Libya

INTRODUCTION

Misuse of antibiotic treatment potentially implies non-compliance with recommended and prescribed therapy. The concept of noncompliance involves practices including self-prescription, incomplete treatment, missing the doses, taking sub optimal doses and reuse of left over antibiotics Kardas P, et al(2005). Antibiotic misuse is a worldwide problem and results in the rapid development of antibiotic resistance, increased health care cost, increased failure of treatment, frequent and prolonged hospitalization, more outpatient and ER visits. A large systemic review from various regions and countries; reporting a mean compliance with antibiotic treatment of 60.2%, and use of left over antibiotics of 28.6% Kardas P, et al(2005). Self-medication is considered as the use of drugs in treating

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self-diagnosed illnesses or symptoms and the intermittent or continuous use of prescription drugs to treat chronic diseases or recurrent symptoms; antibiotic storage at home predicts self-medication Abasaeed, A, et al (2009). Antibiotics are the most important medication and their misuse is mainly for the viral respiratory tract infections, with a parental belief for reduction in the severity of symptoms Friedman BC, et al (2011). In United Arab Emirates, self-use of antibiotics was practiced by 34% of parents in children. Major predictors of antibiotic misuse were storing antibiotics at home and ease of obtaining antibiotics. Another study from Jordan reported 39.5% of self-medication for antibiotics. Main reasons were found the previous experience and socioeconomic factors, low income and education Barah F and Goncalves V(2010).

Huang et al. (2007) believed that a considerable amount of antibiotics prescribed to children is inappropriate. This significant finding of the escalating antibiotic misuse especially in children is therefore considered one of the most important global public health issues. Ali & Ahmed (1995), found that antibiotics were the drugs most commonly prescribed by the primary care physicians for all age groups representing 40–63% of the total drug prescriptions in the Asir region, in southern

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Saudi Arabia. Similarly, Ahmed & Al-Saadi (2005) studied the prescribing patterns of 200 doctors in Saudi Arabia and found that the most frequent drug categories prescribed for all age groups were antibiotics. Thus, information from these resources emphasizes the need for continuing medical education on the physicians' rational prescribing behavior.

Although antibiotics have a significant role in the reduction of morbidity and mortality rates worldwide, their increasing inappropriate consumption leads to the development of bacterial resistant strains. Such resistance to antibiotics is likely to lead to reduction in the effectiveness of many antibiotics (Schroeder, K., & Fahey, T. (2002). Moreover, antimicrobial resistance places both populations and individuals at risk (JETACAR, 1999, Mainous, et,al 2003 and Simasek, M., & Blandino, D. 2007). Green, (2006) asserts that antibiotics are becoming inadvisable with the emergence of antibacterial resistance.

The cost of health services will be significantly elevated if the problem of antibiotic misuse persists (Al-Faris & Al-Taweel, 1999; Foster & Sabella, 2011; JETACAR, 1999; Sarahroodi, et al., 2010). For example, according to West, (2002), \$2 billion are spent each year in USA on over-the counter preparations to

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treat cold symptoms, mainly in children. Moreover, Mainous & Hueston (1998) examined the use of antibiotics to treat URTIs in outpatient setups in USA, and found that 23% of the total cost was for the unnecessary use of antibiotics.

The problem of antibiotic misuse may be influenced by several contributing factors, such as cultural, cognitive (e.g. parents pressure), educational, and socio-economic factors integrated at the level of patients or parents, physicians and pharmaceutical industries. Parental expectation (Real or perceived) is a major factor that influences physicians' prescribing behavior. Studies have revealed that most parents expect physicians to prescribe antibiotics for their children even when presenting with viral infections such as most URTIs (Huang, et al., 2007). In addition, about half of pediatricians in USA report frequent parental pressure to prescribe non-indicated antibiotics (Huang, et al., 2007).

Health education is an important factor contributing to the escalating problem of antibiotic over prescription. Cebotarenco & Bush(2007) revealed that patients' or parents' lack of knowledge in antibiotics therapy (i.e. to treat bacterial infections) and the harmful effect caused by inappropriate

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use (i.e. to treat viral infections) is a contributing factor to the trend of antibiotic misuse.

Evidence shows that careful health professional education in addition to patient awareness would be effective in reducing excessive use of antibiotics (Green, 2006; Panaga-kou, et al., 2011; Teng, et al., 2004). Rising public and health care providers' awareness regarding antibiotics is evidently effective in reducing antibiotic misuse. However, delivering such education may differ according to the setting where the intervention strategy is targeted.

PATIENTS AND METHOD

Identical questionnaires, made up of 25 were used . Questions determined how the patient or parent viewed the need for medical advice and drug therapy. Interviewees were also questioned about their belief in antibiotic therapy. Interviewees were also asked about their adherence to their most recent course of antibiotics in terms of taking the required number of daily doses and the full duration of the course.

RESULTS

A total of 200 children prescriptions were collected from Alzawia hospital pharmacist during a 4 months study 2011-2012.

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Firstly parent's interview on the use of the antibiotics:

The eighty seven parents (43%) were given their children an antibiotic at home before consulting a physician while 56% of the reviewer were did not give antibiotic without prescription.

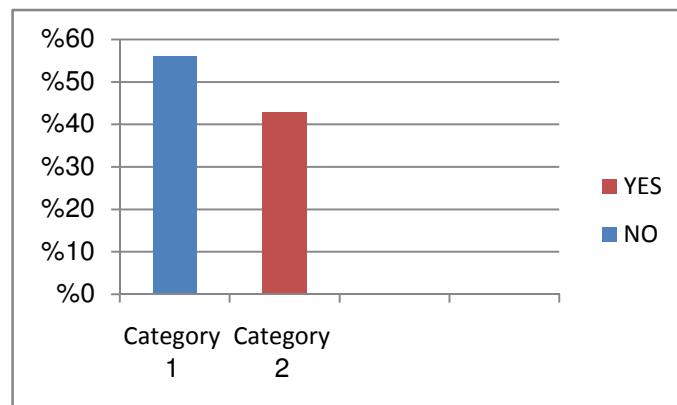


Figure 1: The Percentage of parents had given their children an antibiotic at home before consulting a physician.

In relation to figure 2 the following finding were noted: 31% of the cases believed that their children required antibiotic when the doctor did not prescribe it, while 69% of the cases agree with the doctor.

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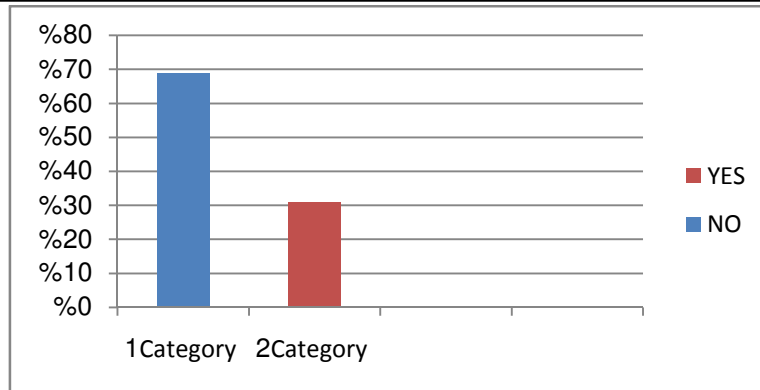


Figure 2: Percentage of parents believed that their children had required an antibiotic when the doctor did not prescribed

The percentage of parents had finished the duration of course of antibiotic to their children were 48% while 51% of the parents did not finish the antibiotic course to the exact duration

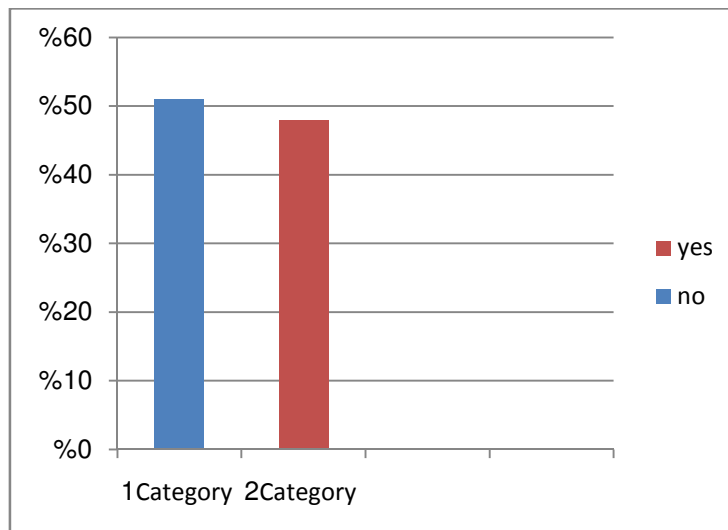


Figure 3: The antibiotic treatment and the correct duration.

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Eighty-one percent (163) of the reviewed parents had read the leaflet of the antibiotics before use it, while 18% (37) did not read the antibiotic leaflet.

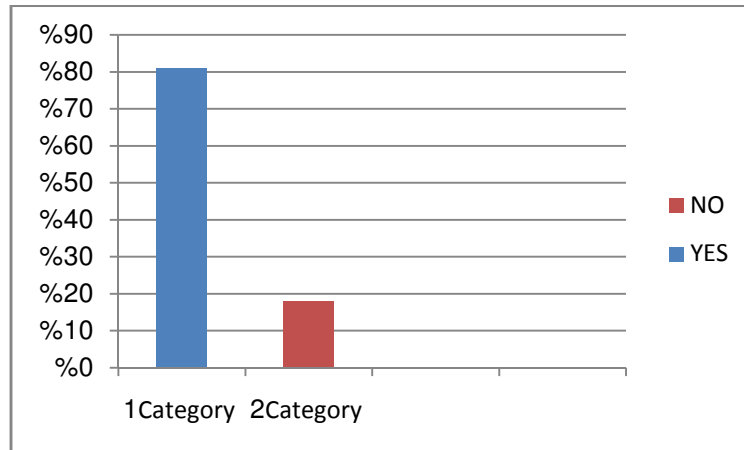
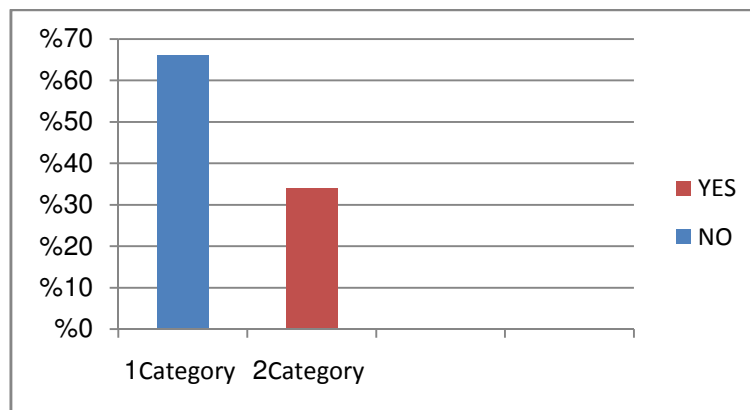


Figure 4: The percentage of parents had read the leaflet of antibiotic before use it.

There were 66% of the total reviewed parents did not give their children the antibiotic in the exact time, while only 34% of the parents give the antibiotic in the exact time schedule.



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Figure 5: The percentage of parents that did not give their children the antibiotic in the exact time.

There were 83% of the total cases had revealed their children to the doctor if the child did not improved within 2–3 days and 16% of the cases revealed the child after more than 3 days.

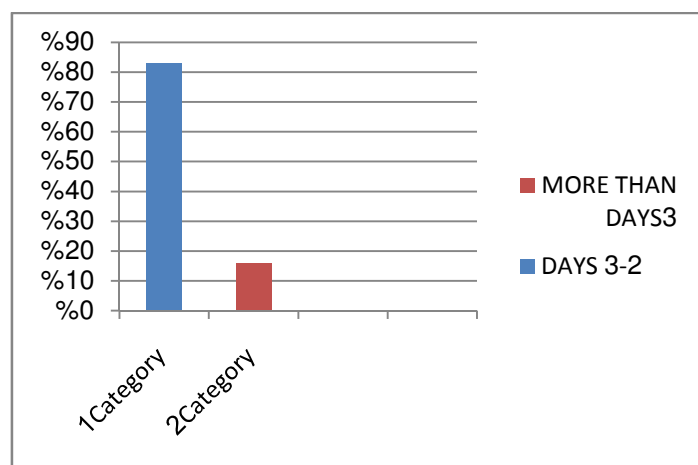


Figure 6: The percentage of parents had revealed their children to the doctor if the child did not improve.

Sixty-nine percent of the total parents did not give the same antibiotic to another child if get sick, however 31% of the parent give the same antibiotic to the another child if get sick.

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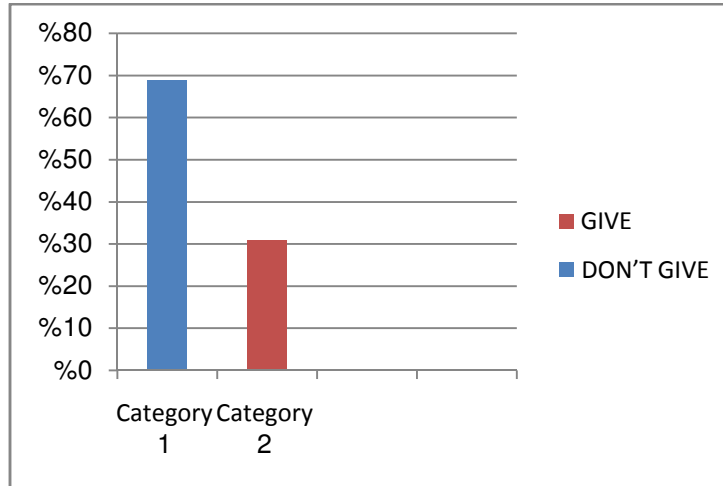
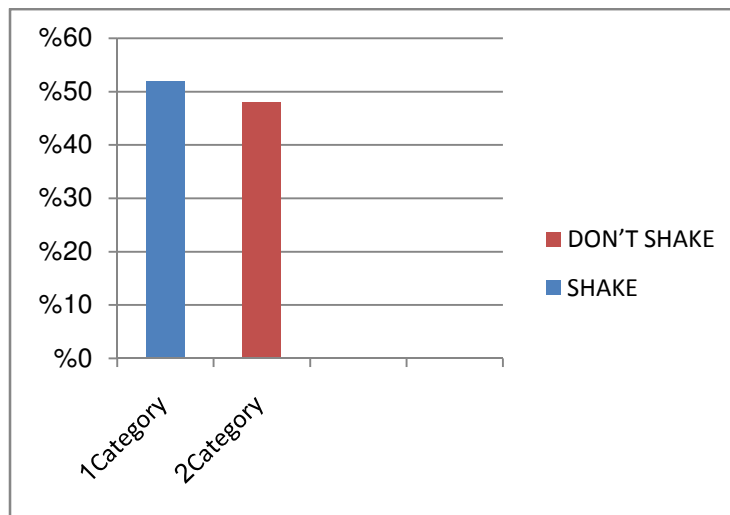


Figure 7: The percentage of parents had given the same antibiotic treatment to another child if get sick.

As shown in figure 8: 52% of the parents shake the antibiotic bottle before each use while 48% of the parents did not shake the antibiotic bottle before use it.



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Figure 8: The percentage of parents that had shaken the bottle of antibiotic drug before every use.

High percentage (67%) of the parents did not keep the antibiotic remaining for a second use, while 33% of the parent keep the antibiotic remaining for second use.

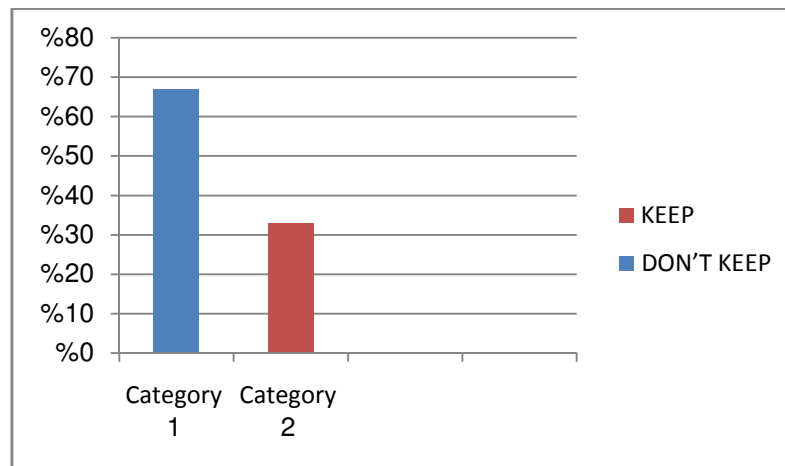


Figure 9: The percentage of parents that keep the antibiotic remaining and kept for second use.

Secondly not only the parent make mistake during use of antibiotic, the doctors may make mistake during prescription of antibiotic as it may give antibiotic without the weight of baby or it may give wrong dose.

The numbers of prescription of antibiotic treatment without diagnosis were 91(45%), while the numbers of prescription with diagnosis were 109 (54%)

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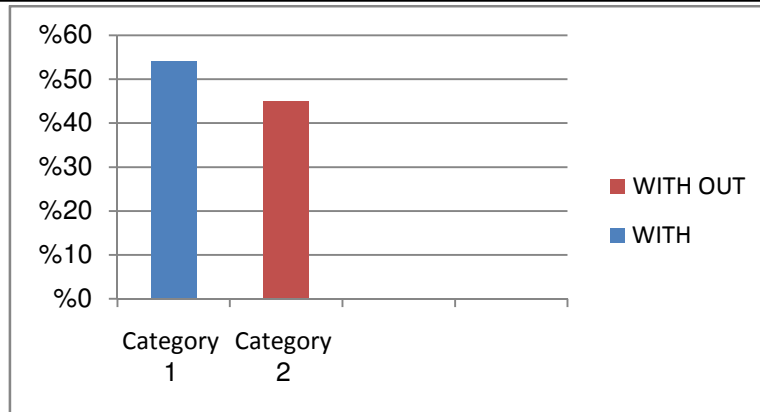


Figure 10: The antibiotic prescription and the diagnosis.

The number of prescriptions without bacterial culture investigation were 198 (99%) while only two prescription (1%) with bacterial culture investigation.

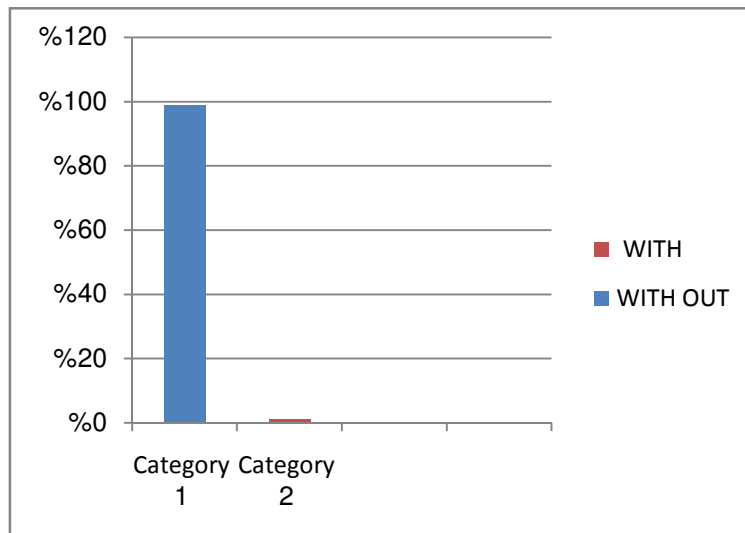


Figure11: The antibiotic prescription and bacterial culture.

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The number of prescriptions without the weight of the child were 27 (13%) while e173 prescription (68%) with the weight of the child .

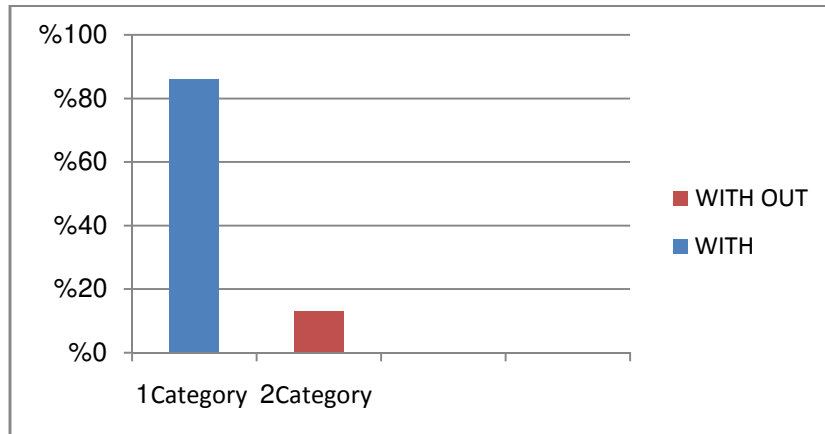


Figure 12: The prescription and the weight of the child.

Fifty-nine percent of the prescription did not contain dose of antibiotic and 141 prescription contain dose of the antibiotic. From this 114 doses (80%) are correct and 19% are incorrect doses.

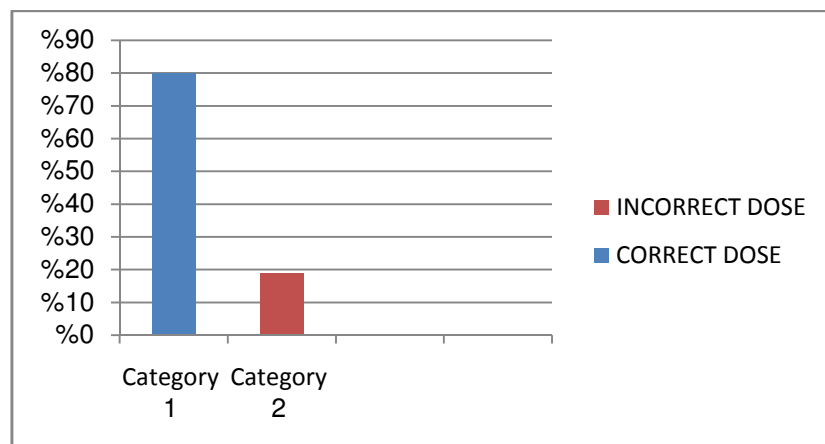


Figure 13: The percentage of the correct antibiotic doses.

Discussion

The principal aim of drug utilization research is to facilitate the rational use of drugs in populations. For the individual patient, the rational use of a drug implies the prescription of a well-documented drug at an optimal dose, together with the correct information, at an affordable price. Drug utilization research can increase our understanding of how drugs are being used. Several reports have investigated the antibiotic utilization pattern in various hospitals around the world Huang et, al (2007). Krivoy N, et al (2007), has reported concern about the continuous, indiscriminate and excessive use of antimicrobial agents that promote the emergence of antibiotic-resistant organisms. Monitoring antimicrobial use as well as evaluating prescription habits are some of the strategies recommended to contain resistance to antimicrobials. Antimicrobial resistance substantially raises already-rising health care costs and ultimately increases patient morbidity and mortality (west, 2002).

This study suggests that patients represent a significant source of antibiotic misuse in the community. Some patients had to exaggerate their symptoms to get the prescription. A majority of patients were willing to take antibiotics for conditions likely to have a viral origin, such as flu, sore throat, cough or earache. Data suggest that patients can exert pressures on

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doctors for antibiotic prescriptions for common respiratory tract infections. Keeping leftover medication for future use was another source of misuse, because these antibiotics are kept in uncontrolled conditions and potentially used later without a medical prescription. It was possible to get antibiotics directly from the pharmacist without prescription in, even where this practice is illegal. This gray area of pharmaceutical practice deserves further investigation to know the relative importance of over-the-counter sales.

Noncompliance may have an impact on antibiotic resistance in the community, as illustrated in multiple drug-resistant tuberculosis Mainous, A., & Hueston, W. (1998). Patients' attitudes varied according to the country. Spain and Thailand were characterized by low compliance and low percentage of mothers having concerns about their child taking antibiotics, implying that antibiotics are considered as trivial drugs. The British appeared as the most disciplined patients, with high self-reported compliance, drugs taken at exact intervals and high respect for the physicians, a trait also shared in Belgium and France. Much more emotional attitudes were recorded in Turkey and Colombia: antibiotics are "strong," they undermine immunity, part of a course can be saved for future use, great concerns regarding the children with respiratory infection are expressed, the demand for medical support is high even though

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many mothers think they are better judges than their doctors. The reasons for these differences are probably multiple, including access to medical care facilities, health insurance system as illustrated in a study conducted in rural China Huang, et al (2007), education, and even cultural background. A notable point is that our study participants (51%) did not finish the duration of antibiotic.

From the data obtained, only two patients were found to have undergone microbial culture investigations, showing that the demand for the initiation of treatment could have dominated over the time-consuming tests for identification of microorganism. Prescribers might have started treatment based on experience about the indication.

A large majority of interviewees believed that doses should be taken at exact intervals as prescribed, including during the night. Almost a quarter of the patients (33%) or mothers saved part of the antibiotic course for future use. Recent studies in European children, also by interviews after antibiotic courses for common respiratory infections, gave similar results on non-adherence attitudes as those presented in this study, 55.7% in Spain Edwards DJ., et al (2002) and 69.5% in Germany You JH, et al (2008).

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The percentage of patients who claimed to finish the antibiotic course were 48%. This in accordance with 53% in Thailand while 90% in the United Kingdom of patients claimed to finish the antibiotic course. The reasons for stopping the course prematurely were mostly because the patients felt better.

History of successful treatment by antibiotics in a family member is vulnerable to increase misuse and storage of leftover antibiotics. In our study 34% disagreed that the repeated use of a specific antibiotic in the community may make it less effective in the future. This indicates a low awareness for the development of bacterial resistance. Such an issue is reported from a study that 28% were unaware of the dangers associated with antibiotic misuse, (You JH, et al 2008), education about the appropriate usage of antibiotics and the issue of bacterial resistance should be introduced to the public. Failure to complete therapy, ignoring and skipping dosage, reusing leftover antibiotic and self-medication can have detrimental effects both at the individual and community level with development of resistance, low potency, diagnostic errors, and therapeutic problem (You JH, et al 2008).

conclusion

Antibiotics misuse/overuse is an important public health issue that affects the community and the individual. This misuse

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of antibiotics, especially in children, will increase the risk of developing bacterial resistance which emphasis on the need to discover the contributing factors to this overuse of antibiotics, Kousalya Prabahar, (2007).)

we conclude, the need to educate community regarding antibiotic use and the consequences of misuse: what diseases actually require antibiotics, why full daily doses must be respected, absence of significant alterations of immunity associated with antibiotic therapy, danger of keeping part of a course for future uncontrolled use, and need of a prescription for getting antibiotics from the pharmacist could be some of the issues to be discussed with the patients.

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