Akılcı Antibiyotik Kullanımına Uyumda Aile Hekimlerinin Rolü

Ahmet Rıza ŞAHİN[1], Çiğdem TEKER[2], Pelin MUTLU AĞAOĞLU[3], Selçuk NAZİK[1], Selma ATEŞ[1]

Öz

Günümüzde antibiyotik direnci, insan sağlığını tehdit eden zorlu mesele olarak nitelendirilmektedir. Bu çalışmada akılcı antibiyotik kullanımında, aile hekimlerinin uyum hedeflerinin gelişimine etkisini araştırdık. 18 yaş üzeri rastgele seçilen hastalarda yüz yüze anket kullanılarak gerçekleştirildi. Demografik özellikler, akılcı antibiyotik kullanımı (AAK), aile hekimlerinin ve eczacıların hastaları bilgilendirmesiyle ilgili kapalı uçlu sorular soruldu. Elde edilen veriler istatistiksel olarak analiz edildi. AAK uyumsuzluğu %50,3 (67) idi. Üst solunum yolu enfeksiyonu nedeniyle antibiyotik reçete edilen %51,1 (68) hastanın AAK uyumsuzluk oranı %63,2 (43) en fazla idi. Aile hekimleri %38,3 (51) oranında antibiyotik hakkında hastaları bilgilendirmişti. Aile hekimleri tarafından bilgilendirilen hasta grubunda antibiyotik kullanımına uyum ve hastanın yeterli bilgiye sahip olması bilgilendirilmeyen gruba göre istatistiksel olarak anlamlı derecede daha iyiydi (p=0,034). Yeni bir antibiyotiğin geliştirilip kullanıma girmesi, yüksek maliyetler ve uzun zamanları gerektirdiğinden dolayı en önemli yaklaşım mevcut antibiyotiklerin korunmasıdır. Çalışmamızda bilgilendirmenin aile hekimi tarafından verilmesinin AAK başarısına ve uyumuna doğrudan etkisinin olduğu görüldü.

Anahtar Kelimeler: Antibiyotik direnci, epidemiyoloji, toplum sağlığı

Yayın Bilgisi
Gönderi Tarihi: 31.10.2018
Kabul Tarihi: 12.02.2019
Online Yayın Tarihi: 31.12.2019
DOI: 10.26453/otjhs.476384

Sorumlu Yazar
Ahmet Rıza ŞAHİN
Kahramanmaraş Sütçü İmam Üniversitesi Tıp Fakültesi Enfeksiyon Hastalıkları Anabilim Dalı Doktor Öğretim Üyesi, Kahramanmaraş, Türkiye
Tel: 0 505 541 47 65
e-Mail: drahmet_riza@hotmail.com

The Role of Family Physicians in Adaptation to Rational Antibiotic Use

Ahmet Rıza ŞAHİN[1], Çiğdem TEKER[2], Pelin MUTLU AĞAOĞLU[3], Selçuk NAZİK[1], Selma ATEŞ[1]

Abstract

Nowadays, antibiotic resistance is described as the most powerful matter that threatens human health. We search for the effects of family physicians to rational use of antibiotics (RUA) and enhancing adaptation goals. The study is performed randomly in outpatients older than 18 whom were prescribed antibiotics by face-to-face questionnaire. Closed ended questions are asked about demographic features, RUA adaptation, family physician and chemist notification. Statistical analysis of acquired data is done. RUA non-adherence is 50.3% (67). Antibiotic is prescribed 51.1% (68) by family physicians because of upper respiratory tract infection, this group is the most non-adherence one with 63.2% (43). Family physicians informed 38.3% (51) prescribed patients about antibiotics. In the group informed by family physicians, it makes a meaningful difference in terms of adherence to the use of antibiotics and patient's having enough knowledge. Because it takes a long time to develop new antibiotics, the most significant action to be taken should be protection of antibiotics in stock. In our study, it was seen that the information given by family physicians had direct impact on patients being capable of RUA and adherence.

Keywords: Antibiotic resistance, epidemiology, public health

Article Info
Received: 31.10.2018
Accepted: 12.02.2019
Online Published: 31.12.2019
DOI: 10.26453/otjhs.476384

Corresponding Author
Ahmet Rıza ŞAHİN
Kahramanmaraş Sütçü İmam Üniversitesi Tıp Fakültesi Enfeksiyon Hastalıkları Anabilim Dalı Doktor Öğretim Üyesi, Kahramanmaraş, Türkiye
Tel: 0 505 541 47 65
e-Mail: drahmet_riza@hotmail.com

[1]Kahramanmaraş Sütçü İmam Üniversitesi Tıp Fakültesi Enfeksiyon Hastalıkları Anabilim Dalı, Kahramanmaraş, Türkiye.
[2]Gaziantep Halk Sağlığı Müdürlüğü, Gaziantep,Türkiye
[3]Kahramanmaraş Sütçü İmam Üniversitesi Tıp Fakültesi Halk Sağlığı Anabilim Dalı, Kahramanmaraş, Türkiye

INTRODUCTION

We have been living on this earth for millions of years but the last century became the milestone of antibiotic age of discovery. These discoveries extending the human lifespan dramatically attracted considerable attention.[1,2] It was announced that the struggle for infection was already over but the matter of antibiotic resistance was realized.[3,4] As a result of wrong dosage, improper time interval and antibiotic usage not leaning on an indication, antibiotic

resistance became very common. It also caused to emerge of microorganisms having multi resistance pattern and finally resistant to every antibiotics.[1,4,5] If this progressive resistance matter is not prevented, treatment of some infection diseases will be impossible.[5] The matter of antibiotic resistance is mostly seen in hospital-acquired infections.[6] Intensive care unit patients with low immunity status and invasive procedures may be increased due to antibiotic resistance problems even in simple infections with non-pathogenic bacteria.

Besides antibiotic resistance, extreme and redundant antibiotic usage also cause huge problems such as public expenditures, rise of undesired effects, unsuccessful treatments and diagnostic difficulties.[5] Today, World Health Organisation (WHO) defines antibiotic resistance as the biggest threats to human's health.[4] There is a total struggle with antibiotic resistance which becomes a global problem. There is a national action plan about the rational use of antibiotics in our country. One of the target is to encourage participation of all doctors, chemists, patients.[2,5] This study aims to show factors for adaptation of patients to RUA, to increase the target and describe how and by whom this training should be given in Kahramanmaraş located in a place that antibiotic usage is at a maximum rate but at a minimum rate in the region.

MATERIAL AND METHOD

Characteristics of selected patients:

Our study is planned as a descriptive research. The population of Kahramanmaraş is currently 1,115,907 and totally 376 family physicians work in different areas of the province. Kahramanmaraş is located in the Mediterranean Region known as the top of antibiotic usage and at the same time it is a place that the antibiotic usage is at the lowest rate (Image 1). The study was performed by random selection of patients aged 18 and older prescribed antibiotics in the last three months. The working set consisted of selected patients who were prescribed antibiotics by the family physicians during the last three months. The ethical approval was taken from Kahramanmaraş Sütçü Imam University (KSU) Medical Faculty ethics committee. Study participation was on a voluntary basis.

Data collection and measurement:

The study is conducted by face to face 19 questions. Closed ended questions were asked about demographic, socio-economic features, information about antibiotics given by chemist and family physician, whole use of antibiotics and sharing antibiotics during usage (Image 2).

Descriptions:

Self-usage of antibiotics (self-medication), uncompleting the whole pillbox and sharing antibiotics during usage are accepted as a clash of RUA. Patient's monthly income was 1603 TL (minimum wage), and poverty line is defined by (Türk İş Poverty Line) as 5330 TL.

Statistics:

SPSS for windows software version 20 was used for statistical analysis. All data was submitted both one dimensional and two dimensional tables. Chi-square test was used and p< 0,05 were accepted for statistically significant.

RESULTS

The average age of 133 patients was 37.84±15.88 (18-86). Patients living in the city centre rate were 69.2% (92) and in the countryside was 30.8% (41). The gender was 57.1% (76) women and 43.9% (57) men. Educational background was 6.8% (9) literate, 33.8% (45) primary school graduate, 30.1% (40) high school education and 29.3% (39) postgraduate. Participants monthly income was minimum waged and under 35.4% (46), 54.9% (73) was between 1603 and 5330 TL, 9.7% (13) was 5330 TL (Table 1). RUA non-adherence rate was 50.3% (67), 85.1% (57) of them were not completed the whole pillbox, 41.8% (27) of them were shared their antibiotics. According to the gender RUA non-adherence rates were 53.9% (41) in women and 45.6% (26) in men (p=0,904).

When examined the relation with education and RUA, adherence was 44.4% (4) in literate patients, 47.5% (19) in primary school graduates, 60.0% (27) in high school and of post-gradute patients (p=0,0767). 38.5% (15), of minimum waged and under 50% (23), of people earn between 1603 and 5330 TL %53.4(39). %23.1 (3) of people earn 5330 TL and over always used the whole pillbox of antibiotics and never shared any of them. It is seen as 50% (23) in the group of minimum income and under, in the group having 1603-5330 TL income 53.4% (39), in the group having 5330TL and upper income by using the whole pillbox 23.1% (3). Our study shows that higher income people are sharing antibiotic less than the others. 51.8% (14) of the participants shared antibiotics with their family members was the minimum in lower waged group and 48.2% (13) in the poverty line group. Participants having 5330 TL monthly income never shared their antibiotics. There was statistically significant inversely correlation between income status and sharing antibiotics (p=0.03).

Family physicians prescribed antibiotics to %51.1 (68) of patients due to upper respiratory tract infection, the most non-adherent group is in this group with 63.2%

(43) (Table 2). The RUA non-adherence in prescriptions of skin soft tissue infection is 18.2%. Family physicians informed prescribed patients about the antibiotics usage. %28.5 (38) of patients were informed about antibiotics by chemists while buying the pills. 94.6% (35) of people having enough knowledge about antibiotic usage were informed by family physician and 70.3% (26) by chemists (Table 3). In the group informed by family physician, there was a significant difference in terms of adaptation to antibiotic use and patient's thinking of having enough knowledge ($p<0.05$).

DISCUSSION

Since this study was done in the city centre of Kahramanmaraş, socio-economic status of participants was higher than patients in socioeconomic development index 2011.[8] In our study the non-adherence of RUA 50.3% (67) is higher than similar studies. This rate is higher than Pechere and his friend's study which reflects Turkey's data (24.8%) and Derin and her friends fieldwork in Balıkesir province (35%).[9,10] The non-adherence of RUA 85.1% (57) was calculated by not using the whole pillbox at recommended time and then by sharing antibiotics with family members 41.8% (27). In Derin's study, men were more adaptable to RUA than women.[10] Our study shows that adaptation to RUA of men is higher than women (men%53,9(41)/women%45,6(26). However, no statistically significant difference was found. ($p>0,05$).

The studies both in our country and in other countries showed that the adherence of RUA was reduced with education.[11-14] There are some other studies showing the adaptation to RUA has increased thanks to education.[2,10,15] In the study of Derin and her friends, it is shown that education makes a big contribution to RUA 51% of participants are high school graduates.[10] The study of Derin and her friends showed us the non-adherence of RUA may be caused by lower education level. In our study, the non-adherence to RUA between high school graduate-lower was seen as 77.6% and postgraduate-higher group 22.4%.[15] Even there was no significant difference ($p=0.0767$), it was seen that the adaptation of RUA increased by education.

The studies in our country show us that the family physicians often prescribe antibiotics in indication of upper respiratory tract infections.[5,10,16] Our study also showed that family physicians prescribed 51.1% antibiotics because of upper respiratory infections and the non-adherence of RUA in this group was 63.2%. When we look from this aspect, our study was similar with literature.[5-10] When we look the results from the aspect of infection type and whole use of antibiotics, the adaptation to RUA was the

best in skin soft tissue infections. That recovery of infection is visible provides to increase faith on antibiotics and complete the treatment. Viral pathogens in upper respiratory infections take an important role in etiology so it is thought that limiting oneself may be independent from antibiotics. In former studies, patients have used antibiotics by the reason of upper respiratory infection show regression of complaints as treatment primary endpoints.[10,17] Some of these patients may not really benefit from antibiotic treatment and use antibiotics unnecessarily.[10,17]

The laboratory testing facility for primary care physicians noted in the Ministry of Health surveillance study was presented in previous years.[5] Family physicians manage treatment process with anamnesis, physical treatment, and early diagnosis. Today, there are lots of commercial preparations by medicine industry. Family physician need to choose the most cost-efficient, effective and easiest posology adaptable treatment.[18-20] Some insistences in our country evaluate cases of prescribing antibiotics according to the wish of patient and doctor's without giving enough information as RUA nonadherence.[21] Twenty percent of the participants attending to Pechere's research about Turkey though that doctors are not capable enough. Thirty four percent of them thought that they can make better decisions than doctors.[9] In our study, 38.3% of patients were informed by family physician, 28.6% of them were informed by chemists. After information, 94.6% of patients have enough knowledge about how to use antibiotics whom were informed by family physician and 70.3% of whom were informed by chemists. Our study shows that the patients count on information given by doctor was different to Pechere's study. A study which were performed in Estonia showed that; patients have little faith to information given by chemists.[22] Our study also shows that patients have more faith to doctor's knowledge than chemist's. There is a significant difference in terms of adaptation to RUA between the groups informed by doctor and not informed by doctor ($p<0.05$)

Finally, because it takes a long time to product new antibiotics, the best thing to do is protecting present antibiotics. The critical point of study is that; we could prevent probable bias by including patients newly beginning to use antibiotics and by detecting bacterial pathogens as a result of culture in order to determine non-adherence of RUA in upper respiratory infection patients. That fast methods of streptococcus antigen tests in upper respiratory infections are available for family physicians several years ago is so crucial for overcoming this situation. We will see the results next years. In order to

make visible for patients seeing the healing such as in skin soft tissue infections, mini cards which includes the images of tonsillopharyngitis day by day can be attached in addition to antibiotic receipts in upper respiratory tract infections thought as bacteriogenic with fast antigen test. The importance of visibility of disease healing will help for increasing the adaptation level of RUA by this kind of cards which is given by family physicians. It is directly seen in our study that informed patients by family physicians feel themselves have enough knowledge and are easily adapted to RUA. Trainings given to family physicians have an important role in studies of adaptation to RUA.

REFERENCES

1. Melli M, Kayaalp OS. Kemoterapötiklere giriş in: Kayaalp OS, Editor, 13. Baskı 2012, Cilt 1, p:157-181.
2. Akıcı A, Oktay Ş, Kayaalp OS. Reçete yazma ve akılcıl ilaç kullanımı, in: Kayaalp O.S., 13. Baskı 2012, Cilt 1, p: 140-157.
3. Levy SB, Marshall B. Antibacterial resistance worldwide: causes, challenges and responses. Nat Med. 2004;10:S122–29.
4. WHO Antimicrobial resistance factsheet. http://www.who.int/mediacentre/factsheets/fs194/en/. Accessed date: september 19, 2018.
5. Ulusal Antibakteriyel İlaç Tüketim Sürveyansı -2013, Sağlık Bakanlığı, http://www.akilciilac.gov.tr/wp-content/uploads/2017/10/2013-srvyns.pdf. Accessed October 04, 2018.
6. Van Boeckel, TP, Gandra S, Ashok A, et al. Global antibiotic consumption 2000 to 2010: an analysis of national pharmaceutical sales data. The Lancet Infectious Diseases. 2014;14(8):742-750.
7. Yalçın AN. Yoğun bakım ünitesinde antibiyotik kullanımı ve direnç sorununa genel bakış. ANKEM Dergisi. 2009;23(Özel Sayı):136-142.
8. http://www3.kalkinma.gov.tr/DocObjects/View/15310/SEGE-2011.pdf. Accesed October 04, 2018.
9. Pechere JC, Hughes D, Kardas P, Cornaglia G. Non-compliance with antibiotic therapy for acute community infections: a global survey. Int J Antimicrob Agents. 2007;29(3):245-53.
10. Derin O, Özdemir H, Sari M, Gülten E. Dursunbey Ilçesinde Antibiyotik Kullaniminda Uyumsuzluk: Kesitsel Bir Çalisma. Klimik Dergisi. 2016;29(3):125.
11. İlhan MN, Durukan E, İlhan SÖ, Aksakal FN, Özkan S, Bumin MA. Self-medication with antibiotics:

questionnaire survey among primary care center attendants. Pharmacoepidemiol Drug Saf. 2009;18(12):1150–7.

12. Bennadi D. Self-medication: a current challenge. J Basic Clin Pharm. 2014; 5(1):19-23.
13. Napolitano F, Izzo MT, Giuseppe GD, Angelillo IF. Public knowledge, attitudes, and experience regarding the use of antibiotics in Italy. PloS ONE, 2013;8(12):e84177. doi: 10.1371/journal. pone.0084177.
14. Nayir T, Okyay RA, Yesilyurt H, et al. Assessment of rational use of drugs and self-medication in Turkey: a pilot study from Elazıg and its suburbs. Pakistan journal of Pharmaceutical sciences. 2016;29(4 Suppl):1429-1435.
15. Gökçe T. Birinci basamak sağlık kuruluşuna başvuran hastaların antibiyotik kullanımı konusundaki davranış ve bilgi düzeylerinin araştırılması. Doktora tezi, Pamukkale Üniversitesi, Denizli; 2017.
16. Şahin H, Arsu G, Köseli D, Büke Ç. Sağlık ocaklarında çalışan hekimlerinin akılcı antibiyotik kullanımıyla ilgili bilgi düzeylerinin değerlendirilmesi. Mikrobiyol Bül. 2008;42(2):343-8.
17. Okyay RA, Erdoğan A. Self-medication practices and rational drug use habits among university students: a cross-sectional study from Kahramanmaraş, Turkey. Peer J. 2017;5: e3990
18. Kalyoncu Nİ, Yarış E. Akılcı ilaç kullanımında hekim sorumluluğu. Toplum ve Hekim Dergisi. 2004;19:359-63.
19. Çalıkoğlu O. Erzurum il merkezinde çalışan pratisyen hekimler ile 20 yaş ve üzeri kişilerin akılcı ilaç kullanım boyutları ve etkileyen faktörler. Uzmanlık tezi, Erzurum, Atatürk Üniversitesi; 2006.
20. Çelik S. Jenerik ve özgün ilaç: biyoyararlanım çalışmaları ve biyoeşdeğerlilik. Toplum ve Hekim Dergisi. 2004; 19:431-6.
21. Sürmelioğlu N, Kıroğlu O, Erdoğdu T, Karataş Y. Akılcı olmayan ilaç kullanımını önlemeye yönelik tedbirler. Arşiv Kaynak Tarama Dergisi. 2015;24(4):452-462.
22. Villako P, Volmer D, Raal A. Factors influencing purchase of and counselling about prescription and OTC medicines at community pharmacies in Tallinn, Estonia. Acta Pol Pharm. 2012;69(2):335-340.

Image 1. Turkey antibiotics consumption map (Received from "Ulusal Antibakteriyel ilaç tüketim Sürveyansı 2013" T.C. Ministry of Health) http://www.akilciilac.gov.tr/wp-content/uploads/2017/10/2013-srvyns.pdf (Permission was obtained from the ministry of health.).

ANTIBIOTIC COMPLIANCE STUDY

1) Turkish Identity Number:
2) Age :
3) Sex: Men □ Women □
4) Education: primary school □ secondary school □ high school □ college □
5) Residence : country □ city □
6) Monthly Income : 1603 □ 5330 □ upper than 5330 □
7) Number of people living in house: 1 □ 2 □ 3 □ 4 □ 5 □ 5-10 □ upper than 10□

8) Family Health Center you are connected to:

9) Have you used antibiotics in the last 3 months?
YES □ NO □
10) Did your doctor inform you about antibiotics?
YES □ NO □
11) Did your pharmacist inform you about antibiotics?

YES □ NO □

12) Do you think you have got enough information about your antibiotic?

YES □ NO□

13) Antibiotics were prescribed for diseases.....

Upper respiratory tract infection:
Lower respiratory tract infection:
Urinary tract infections:
Infections of the digestive system:
Skin soft tissue infections:

14)Did you use the entire antibiotic?
YES □ NO □
15) Why not?

My complaints have gone / I feel ok:
The drug was ineffective:
Side effect occurred:
I was recommended not to use:
Taste bad / could not swallow:

16) If you stop using due to side effects:
The doctor told me about the side effects.
The pharmacist informed me of side effects

17) What did you do the antibiotics you stopped using ?

I threw in the trash:
I donated:
It is at my home:
I can use it again:

18) Did you share your antibiotic?

YES □ NO □
19)Could you share your antibiotic with someone having similar illness without a physician's recommendation?
YES □ NO □

Image 2. Survey form.

Table 1. Demographic data of the patients included in the study.

DEMOGRAPHICAL FINDINGS			
Variable		**Frequency (n)**	**Percentage (%)**
Gender	Male	57	43.9
	Female	76	57.1
Living area	Urban	92	69.2
	Rural	41	30.8
Educational status	Literate	9	6.8
	Primary school	45	33.8
	Highschool	40	30.1
	Postgrudate	39	29.3
Monthly İncome	Minimum waged	46	35.4
	1603-5330 TL	73	54.9
	5330 and over	13	9.7

Table 2. The effect of family physician information on compliance.

	Informing about antibiotics use				
Antibiotics Use	**Yes**		**No**		**p**
	%	n	%	n	
RUA obedient	% 46,1	35	% 53,9	41	0.034
RUA disobedient	% 28,1	16	% 71,9	41	

Table 3. The Effect of Information by Doctor on the Knowledge Level.

Adequate knowledge	**To Be Informed By Doctor**				**p**
	Yes		**No**		
	%	n	%	n	
Yes	% 94,6	(35)	% 5,4	(2)	<0.05
No	% 16,7	(16)	% 83,3	(80)	