Enfeksiyon Hastalıklarında Son Bir Yılda Öne Çıkan Literatürler Türkiye'den Yayınlar

Dr. Behice Kurtaran

Ç.Ü.T.F. Enfeksiyon Hastalıkları ve Klinik Mikrobiyoloji AD

HEPATİT

Clinical usefulness of mean platelet volume and red blood cell distribution width to platelet ratio for predicting the severity of hepatic fibrosis in chronic hepatitis B virus patients

Ergenekon Karagoz[a], Asım Ulcay[a], Alpaslan Tanoglu[b], Muammer Kara[b], Vedat Turhan[a], Hakan Erdem[a], Oral Oncul[a] and Levent Gorenek[a]

Objective Hepatitis B virus infection is still one of the leading causes of cirrhosis and hepatocellular carcinoma worldwide. Liver biopsy is the gold-standard method to assess the severity of liver fibrosis, but the invasive nature of this method limits its usage. Currently, noninvasive parameters are utilized to estimate liver histology. In the present study, we aimed to investigate the relationship between the severity of fibrosis and red blood cell distribution width (RDW), platelet distribution width (PDW), mean platelet volume (MPV), and MPV and red blood cell distribution width to platelet ratio (RPR) in patients with chronic hepatitis B (CHB).

Design A total of 229 biopsy-proven naïve CHB cases were included in the study. The complete blood count variables including white blood cell, hemoglobin, hematocrit value, platelet count, RDW, MPV and PDW, as well as aspartate aminotransferase, alanine aminotransferase, total bilirubin, albumin, and other routine biochemical parameters were tested. Liver biopsy samples were examined using the Ishak scoring system. Data analyses were carried out using SPSS 15 software. Statistical difference between these two groups for RDW ($P < 0.05$). The RDW value in group 1 patients was 11.83 ± 0.89, whereas this value was 12.57 ± 1.32 in group 2. Moreover, the RPR was significantly higher in group 2 than in group 1 ($P < 0.001$). There was no significant difference between the groups for PDW. We have compared the receiver operating characteristic curves for the diagnostic performance of aspartate aminotransferase, alanine aminotransferase, platelet count, RDW, MPV, and RPR in identifying fibrosis in CHB and area under the curve values for these variables were 0.666, 0.463, 0.657, 0.672, 0.677, and 0.758, respectively.

Conclusion MPV and RDW values are significantly higher in hepatitis B virus-infected patients, associated with severity, and can be defined as independent predicting factors in hepatic fibrosis. Further studies are required to determine the associations between MPV and the severity of fibrosis in hepatitis B patients. *Eur J Gastroenterol Hepatol* 26:1320–1324 © 2014 Wolters Kluwer Health | Lippincott Williams & Wilkins.

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AMAÇ

- KHB enfeksiyonunda fibrozu belirlemede biyopsi altın standart, ancak invazif
- Eritrosit dağılım genişliği (RDW), Platelet dağılım genişliği (PDW), ortalama platelet hacmi (MPV) ve RDW'nin platelete oranı (RPR) değerlerinin fibroz değerleri ile ilişkisinin araştırılması

GEREKÇE

- MPV ve PDW, plateletin boyutu ve plateletin boyutlarının farkının derecesinin ifadesi
- MPV, inflamasyonun ve yoğunluğunun işareti
  - Rutin kan sayımında var
- Kronik karaciğerde splenik sekestrasyon nedeniyle platelet ömrü daha kısa
  - Kemik iliğinde yeni platelet üretimi
  - Dolaşımda genç plateletler
- KHB'de inflamasyona bağlı IL-6 artışı
  - K.i'nde platelet üretiminde artış
- Beklenti, KHB'de MPV ve PDW artışı

YÖNTEM

- 229 biyopsi kanıtlı naif KHB hastası
- KC Bx- Ishak skorlama sistemi
- %91,7 erkek,
- 30,9 yaş ortalaması,
- %37,1 HBeAg (+)

Table 1 Comparison of cases with liver fibrosis scores 0–2 and 3–6

	Fibrosis	*N*	Mean value	SD	*P*
Age (years)	Fibrosis < 3	188	27.117	10.293	**0.001**
	Fibrosis ≥ 3	41	48.439	19.278	
Sex (male)	Fibrosis < 3	181 (96.3%)	–	–	–
	Fibrosis ≥ 3	29 (70.7%)	–	–	
MPV (fl)	Fibrosis < 3	188	7.98	1.20	**0.001**
	Fibrosis ≥ 3	41	8.77	1.44	
PDW (%)	Fibrosis < 3	188	15.99	0.80	0.208
	Fibrosis ≥ 3	41	15.80	1.10	
RDW	Fibrosis < 3	188	11.83	0.89	**0.001**
	Fibrosis ≥ 3	41	12.57	1.32	
Platelet ($\times 10^3/mm^3$)	Fibrosis < 3	188	234.29	62.63	**0.001**
	Fibrosis ≥ 3	41	171.20	73.90	
Blood glucose	Fibrosis < 3	188	86.92	14.92	**0.001**
	Fibrosis ≥ 3	41	102.76	47.15	
Total bilirubin	Fibrosis < 3	188	0.80	0.68	**0.002**
	Fibrosis ≥ 3	41	1.19	0.76	
ALT (U/l)	Fibrosis < 3	188	84.22	56.796	0.128
	Fibrosis ≥ 3	41	97.44	84.445	
AST (U/l)	Fibrosis < 3	188	44.94	27.22	**0.001**
	Fibrosis ≥ 3	41	78.12	67.19	
Histological activity index	Fibrosis < 3	188	4.42	1.63	**0.001**
	Fibrosis ≥ 3	41	7.93	2.16	
Albumin (g/dl)	Fibrosis < 3	188	4.255	0.366	**0.000**
	Fibrosis ≥ 3	41	3.646	0.541	
Prothrombin time (%)	Fibrosis < 3	188	12.914	1.375	**0.001**
	Fibrosis ≥ 3	41	13.890	2.011	
RDW/PLT	Fibrosis < 3	188	0.0541	0.015	**0.000**
	Fibrosis ≥ 3	41	0.1023	0.105	
PDW/MPV	Fibrosis < 3	188	2.043	0.293	**0.001**
	Fibrosis ≥ 3	41	1.846	0.312	

Statistically significant *P* values ($P<0.05$) are indicated in bold.
ALT, alanine aminotransferase; AST, aspartate aminotransferase; MPV, mean platelet volume; PDW, platelet distribution width; PLT, platelet count; RDW, red blood cell distribution width.

Table 2 Demographic characteristics and laboratory findings of chronic hepatitis B patients

	Group comparisons			Logistic regression analysis
	Group 1 (n = 188) (F0, F1, F2)	Group 2 (n = 41) (F3, F4, F5, F6)	P	Univariate OR (95% CI)
Age	27.12±10.29	48.44±19.28	<0.001	1.087 (1.061–1.113)
Sex (male/female)	181 (96.3%)/7 (3.7%)	29 (70.7%)/12 (29.3%)	<0.001	0.093 (0.034–0.257)
AST (IU/l)	44.94±27.22	78.12±67.19	<0.001	1.018 (1.008–1.028)
ALT (IU/l)	84.22±56.8	97.44±84.45	0.225	1.003 (0.998–1.008)
PLT ($\times 10^3$)	234.29±62.63	171.2±73.9	<0.001	0.983 (0.977–0.990)
Albumin	4.26±0.37	3.65±0.54	<0.001	0.026 (0.008–0.087)
Total bilirubin (mg/l)	0.8±0.68	1.19±0.76	0.014	1.901 (1.138–3.173)
PT (s)	12.85±1.67	13.91±2.04	0.001	1.449 (1.172–1.792)
MPV (fl)	7.98±1.2	8.77±1.44	0.001	1.580 (1.218–2.050)
RDW (%)	11.83±0.89	12.57±1.32	<0.001	1.803 (1.331–2.444)

Values are expressed as n (%), mean±SD, or median (25th and 75th percentiles).

ALT, alanine aminotransferase; AST, aspartate aminotransferase; CI, confidence interval; MPV, mean platelet volume; OR, odds ratio; PLT, platelet count; PT, prothrombin time; RDW, red blood cell distribution width.

SONUÇLAR

- KHB'de MPV ve RDW belirgin yüksek
  - Hastalığın ciddiyetine göre artış gösteriyor
  - Hepatik fibrozu öngörmede bağımsız faktör
- RDW için cut-off %12,6'nın tanısal duyarlılığı %91,5, özgüllüğü %42,5
- RPR, belirgin fibroz ve sirozu tahmin etmede üstün performansa sahip

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Low Prevalence of Hepatitis C Virus Infection Among HIV-Positive Patients: Data From a Large-Scale Cohort Study in Istanbul, Turkey

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Background: Rate of coinfection with human immunodeficiency virus (HIV) and hepatitis C virus (HCV) varies in different countries. This may be attributable to common transmission routes as well as social, economic and cultural factors.
Objectives: The purpose of this study was to investigate the prevalence and risk factors of HCV infection among HIV-positive patients in Istanbul, Turkey.
Patients and Methods: Since January 2006 to November 2013, 949 HIV-positive patients that were enrolled in this study by ACTHIV-IST (Action Against HIV in Istanbul) Study Group, which consists of five centers to follow up HIV-positive patients in Istanbul. Epidemiologic and clinical data were collected retrospectively from medical records and were transferred to an HIV database system.
Results: Among 949 patients, 84% were men and the mean age was 37.92 ± 11.54 years (range, 17-79). The most frequent route of transmission was heterosexual intercourse (48.8%), followed by men having sex with men (30.5%). Only nine patients (0.9%) had history of injection drug use (IDU). The prevalence of HIV/HCV coinfection was 0.9% (9:949). The IDU rate was 44.4% (4:9) in patients with HIV/HCV coinfection (three of them were not Turkish citizens), whereas this rate was only 0.6% (5:881) in patients with only HIV infection ($P < 0.01$). Genotypes 1b, 2a/2c, and 3 were determined in five, one, and two patients, respectively. Genotype could not be determined in one patient. History of residence in a foreign country ($P < 0.01$) and imprisonment ($P < 0.01$) were also considered as risk factors in terms of HIV/HCV coinfection.
Conclusions: Prevalence of HIV/HCV coinfection is considerably low in Turkey. The extremely rare prevalence of IDU might have a role in this low prevalence.

Keywords: Human Immunodeficiency Virus; Hepatitis C Virus; Prevalence; Turkey

- 2006-2013
- 949 HIV enfekte birey
- ACTHIV-IST Çalışma Grubu
- 5 merkez
- HIV (+) hastada HIV prevalansı ve risk faktörleri

- %84 erkek
- Ortalama yaş 37.92±11.54
- HIV/HCV koenfeksiyonu %0.9 (9/949)
- IDU oranı %44.4
- Genotip 1b (5) kişi
- Yabancı ülkede yaşama ve hapishanede kalma öyküsü risk faktörü ($p<0.01$)

ANTİBİYOTİK DİRENCİ

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Detection of the frequency of PER-1 type extended-spectrum β-lactamase–producing *Acinetobacter baumannii* clinical isolates in Turkey: a multicenter study

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Figure. The locations of study centers within Turkey.

- 763 klinik *A.baumannii* suşu
- 9 üniversite, 2 devlet hastanesi
- 2008-2011
- Oxa-51 gen moleküler amplifikasyonu
- bla_{PER-1} gen tespiti real-time PZR ile

- PER-1 izolatların %24.6'sında
  - 2008 %52.2
  - 2009 %35.9
  - 2010 %8.3
- PER-1 prevalansı giderek azalıyor ($p<0.001$)

Table. PER-1 frequencies and the antimicrobial resistance profiles of *A. baumannii* isolates from various hospitals in Turkey.

City	Year	Location in Turkey	n	PER-1 (+) n/%	PER-1 (–) n/%	Antimicrobial resistance rate. %						
						IPM	MEM	FEP	SCF	GEN	AMK	TOB
*Afyonkarahisar	2008	West	42	10/23.8	32/76.2	47.6	54.8	100	52.3	83.3	71.4	64.2
*Kahramanmaraş	2008	Southeast	32	15/46.9	17/53.1	65.6	65.6	87.5	50.0	71.8	68.7	12.5
*Van	2008	East	62	46/74.2	16/25.8	45.2	50.1	95.1	73.5	90.3	70.9	9.7
*Afyonkarahisar	2009	West	79	21/26.6	58/73.4	60.8	60.8	97.5	67.1	48.1	48.1	32.9
*İstanbul	2009	Marmara	41	9/22.0	32/78.0	92.6	92.6	100	73.8	85.3	80.5	51.2
**Konya	2009	Middle	65	21/32.3	44/67.7	93.8	92.3	100	92.3	72.3	72.3	53.8
*Bolu	2009	North	43	31/72.1	12/27.9	81.4	81.4	100	88.3	100	88.3	32.5
*Afyonkarahisar	2010	West	105	1/0.9	104/99.1	83.8	82.9	97.1	61.9	80.0	66.6	39.0
**Ankara	2010	Middle	50	1/2.0	49/98.0	60.0	60.0	88.0	70.0	58.0	76.0	52.0
*Erzurum	2010	East	49	7/14.3	42/85.7	69.4	69.4	91.8	77.5	65.3	71.4	40.8
*Isparta	2010	South	94	11/11.7	83/88.3	72.3	76.6	82.9	60.6	76.6	88.3	20.2
*Konya	2010	Middle	74	11/14.9	63 / 85.1	98.7	98.7	98.7	97.3	93.2	79.7	52.7
*Van	2011	East	18	4/22.2	14 / 77.8	94.4	94.4	100	88.8	88.8	83.3	27.7
*Elazığ	2011	East	9	0/0	9 / 100	77.7	88.8	88.8	77.7	66.6	88.8	22.2
TOTAL			763	188/24.6	575/75.4	74.5	76.3	94.8	73.6	77.1	75.3	36.5

*: University hospital, **: state hospital, IPM: imipenem, MEM: meropenem, FEP: cefepime, SCF: cefoperazone-sulbactam, GEN: gentamicin, AMK: amikacin, TOB: tobramycin.

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Increasing resistance of nosocomial *Acinetobacter baumannii*: are we going to be defeated?

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Aim: To investigate the change of the antibiotic resistance profiles of the nosocomial *Acinetobacter baumannii* isolates in intensive care units (ICUs) between the years 2008 and 2011.

Materials and methods: *A. baumannii* isolates that were responsible for ICU-acquired nosocomial infections between 2008 and 2011 were included in the study. The susceptibility rates of the antibiotics that are mainly used in the treatment of *Acinetobacter* infections were compared by years. Clinical and Laboratory Standards Institute criteria were used to determine antimicrobial susceptibility.

AMAÇ

- Nozokomiyal *Acinetobacter baumanni* izolatlarında 2008 ve 2011 yılları arasında antibiyotik direnç profilindeki değişimin belirlenmesi

SONUÇLAR

- 229 YB hastasında gelişen 252 *A.baumannii*'nin neden olduğu enfeksiyon atağı
  - VİP, Bakteremi, Üriner enfeksiyon
- Giderek artan karbapenem direnci
- Kolistine direnç gelişmeye başlaması
- Tigesikline artan direnç

Table 1. *Acinetobacter baumannii* infections according to ICU types and years.

ICU	2008 (%) n = 50	2009 (%) n = 52	2010 (%) n = 55	2011 (%) n = 95
Reanimation	56	53.8	50.9	87.4
Neurosurgery-neurology	36	40.4	38.2	NA
Cardiovascular surgery	6	1.9	3.6	8.4
Coronary	2	3.8	7.3	4.2

ICU: intensive care unit. NA: not available (neurosurgery-neurology ICU was transferred to the reanimation ICU).

Table 2. Nosocomial *Acinetobacter baumannii* infections according to infection site.

Infection site	2008	2009	2010	2011
VAP	39	39	42	67
Primary bacteremia	0	5	7	8
Catheter related bloodstream infection	6	5	3	17
Soft tissue infection	3	1	0	2
Pneumonia	1	0	1	0
Urinary tract infection	0	2	1	1
Meningitis	1	0	1	0
Total (n = 252)	50	52	55	95

VAP: Ventilator-associated pneumonia.

Table 3. Resistance rates of *Acinetobacter baumannii* by years.

Antibiotic	2008	2009	2010	2011	P*
Ampicillin/sulbactam (n = 241)	95.7	97.9	90.6	93.5	0.72
Amikacin (n = 246)	88	84.6	81.8	84.2	0.27
Gentamicin (n = 248)	96	76.5	66	87.2	0.14
Netilmicin (n = 183)	41.7	52.1	57.6	53	0.37
Tobramycin (n = 243)	54.2	54	46.3	68.1	0.15
Trimethoprim/sulfamethoxazole (n = 242)	91.7	85.4	73.6	72	0.013**
Cefotaxime (n = 242)	98	100	98	97.8	1.0
Ceftazidime (n = 234)	100	97.8	97.9	98.9	1.0
Ciprofloxacin (n = 243)	98	100	96.2	97.8	1.0
Ticarcillin/clavulanate (n = 199)	97.9	100	97.1	98.5	1.0
Piperacillin/tazobactam (n = 247)	91.7	100	98.1	98.9	0.045
Cefepime (n = 229)	97.6	100	100	96.8	1.0
Cefoperazone/sulbactam (n = 221)	45.7	88.4	78	90.3	0.000
Imipenem (n = 251)	54	92.3	94.4	98.9	0.000
Meropenem (n = 247)	73.5	98	94.4	98.9	0.000
Doripenem (n = 9)	NA	NA	NA	100.0	NA
Tigecycline (n = 145)	NA	12.5	34.8	81.3	0.000
Colistin (n = 139)	NA	NA	NA	2.9	NA

*: The resistance rates in 2008 were compared to the resistance rates in 2011 for antibiotics except tigecycline. For tigecycline, 2009 resistance rates were compared to those of 2011.
**: This decrease in the resistance rates was found to be significant statistically.
NA: not available.

HASTANE ENFEKSİYONLARI

ANNALS OF CLINICAL MICROBIOLOGY AND ANTIMICROBIALS

RESEARCH Open Access

International Nosocomial Infection Control Consortium (INICC) national report on device-associated infection rates in 19 cities of Turkey, data summary for 2003–2012

Hakan Leblebicioglu[1], Nurettin Erben[2], Victor Daniel Rosenthal[3*], Begüm Atasay[4], Ayse Erbay[5], Serhat Unal[6], Gunes Senol[7], Ayse Willke[8], Asu Özgültekin[9], Nilgün Altin[10], Mehmet Bakir[11], Oral Oncul[12], Gülden Ersöz[13], Davut Ozdemir[14], Ata Nevzat Yalcin[15], Halil Özdemir[16], Dinçer Yıldızdaş[17], Iftihar Koksal[18], Canan Aygun[19], Fatma Sirmatel[20], Alper Sener[21], Nazan Tuna[22], Özay Arikan Akan[23], Huseyin Turgut[24], A Pekcan Demiroz[25], Tanil Kendirli[26], Emine Alp[27], Cengiz Uzun[28], Sercan Ulusoy[29] and Dilek Arman[30]

Abstract

Background: Device-associated healthcare-acquired infections (DA-HAI) pose a threat to patient safety, particularly in the intensive care unit (ICU). We report the results of the International Infection Control Consortium (INICC) study conducted in Turkey from August 2003 through October 2012.

Methods: A DA-HAI surveillance study in 63 adult, paediatric ICUs and neonatal ICUs (NICUs) from 29 hospitals, in 19 cities using the methods and definitions of the U.S. NHSN and INICC methods.

Results: We collected prospective data from 94,498 ICU patients for 647,316 bed days. Pooled DA-HAI rates for adult and paediatric ICUs were 11.1 central line-associated bloodstream infections (CLABSIs) per 1000 central line (CL)-days, 21.4 ventilator-associated pneumonias (VAPs) per 1000 mechanical ventilator (MV)-days and 7.5 catheter-associated urinary tract infections (CAUTIs) per 1000 urinary catheter-days. Pooled DA-HAI rates for NICUs were 30 CLABSIs per 1000 CL-days, and 15.8 VAPs per 1000 MV-days. Extra length of stay (LOS) in adult and paediatric ICUs was 19.4 for CLABSI, 8.7 for VAP and 10.1 for CAUTI. Extra LOS in NICUs was 13.1 for patients with CLABSI and 16.2 for patients with VAP. Extra crude mortality was 12% for CLABSI, 19.4% for VAP and 10.5% for CAUTI in ICUs, and 15.4% for CLABSI and 10.5% for VAP in NICUs. Pooled device use (DU) ratios for adult and paediatric ICUs were 0.54 for MV, 0.65 for CL and 0.88 for UC, and 0.12 for MV, and 0.09 for CL in NICUs. The CLABSI rate was 8.5 per 1,000 CL days in the Medical Surgical ICUs included in this study, which is higher than the INICC report rate of 4.9, and more than eight times higher than the NHSN rate of 0.9. Similarly, the VAP and CAUTI rates were higher compared with U.S. NHSN (22.3 vs. 1.1 for VAP; 7.9 vs. 1.2 for CAUTI) and with the INICC report (22.3 vs. 16.5 in VAP; 7.9 vs. 5.3 in CAUTI).

(Continued on next page)

AMAÇ

- Ülkemizin 2003-2012 tarihleri arasındaki alet ilişkili nozokomiyal enfeksiyon oranları
  - International Nosocomial Infection Control Concortium (INICC) ulusal raporu
- 19 şehir, 29 hastane, 63 erişkin, çocuk ve yenidoğan YBÜ
- 94,498 hastanın, 647,316 yatak günündeki prospektif verileri

Table 1 Characteristics of the participating intensive care units

	<200 beds hospitals	201-500 bed hospitals	501-1000 bed hospitals	>1000 bed hospitals	Overall
No. of hospitals	3 (10%)	8 (28%)	10 (34%)	8 (28%)	29 (100%)
No. of ICUs	4 (6%)	20 (32%)	29 (46%)	10 (16%)	63 (100%)
Medical Cardiac	1 (25%)	2 (50%)	1 (25%)	0 (0%)	4 (100%)
Cardiothoracic	0 (0%)	1 (33%)	1 (33%)	1 (33%)	3 (100%)
Medical	0 (0%)	4 (44%)	3 (33%)	2 (22%)	9 (100%)
Medical/Surgical	1 (5%)	5 (26%)	9 (47%)	4 (21%)	19 (100%)
Neonatal	1 (17%)	2 (33%)	2 (33%)	1 (17%)	6 (100%)
Neurologic	0 (0%)	0 (0%)	2 (100%)	0 (0%)	2 (100%)
Neurosurgical	0 (0%)	1 (33%)	2 (67%)	0 (0%)	3 (100%)
Paediatric	1 (14%)	1 (14%)	4 (57%)	1 (14%)	7 (100%)
Respiratory	0 (0%)	1 (50%)	1 (50%)	0 (0%)	2 (100%)
Surgical	0 (0%)	3 (38%)	4 (50%)	1 (13%)	8 (100%)

- 1000 santral kateter gününe 11.1 KİKDE
- 1000 mekanik ventilatör gününe 21.4 VİP
- 1000 idrar kateteri gününe 7.5 KİİYE

Table 2 Pooled means of central line-associated bloodstream infection rates, urinary catheter-associated urinary tract infection rates, and ventilator-associated pneumonia by hospital size

Hospital size, beds, n	ICUs, n	Patients, n	Bed days, n	CL days, n	CLABSI, n	CLABSI rate (95% CI)	MV days, n	VAP, n	VAP, Rate (95% CI)	UC days, n	CAUTI, n	CAUTI, rate (95% CI)
<200	3	713	14 706	9,459	41	4.3 (31 – 5.9)	7,536	40	5.3 (3.8 - 7.2)	10 621	43	4.0 (2.9 - 5.5)
201-500	18	23 896	167 058	88 917	382	4.3 (3.9 – 4.7)	84 714	2193	25.9 (24.8 - 26.9)	142 965	652	4.6 (4.2 - 4.9)
501-1000	27	61 350	382 283	189 728	1,939	10.2 (9.8 – 10.7)	142 735	3152	22.1 (21.3 - 22.8)	314 847	2957	9.4 (9.0 - 9.7)
>1000	9	5,109	4,914	31 432	329	10.5 (9.4 – 11.7)	37 310	431	11.6 (10.4 - 12.7)	42 106	180	4.3 (3.7 - 4.9)
Pooled	57	91 068	613,191	319 536	2,691	8.4 (8.1 – 8.7)	272 295	5,816	21.4 (20.8 - 21.9)	510 539	3,832	7.5 (7.3 - 7.7)

Adult and Paediatric Patients. DA module, 2003-2012

ICU, intensive care units; CL, central line; CLABSI, central line-associated bloodstream infection; CI, confidence interval; MV, mechanical ventilator; VAP, ventilator-associated pneumonia; UC, urinary catheter; CAUTI, catheter-associated urinary tract infection.

- Kaba mortalite
  - KiKDE: %12
  - VİP: %19.4
  - KİİYE: %10.5

Table 11 Pooled means of the distribution of crude mortality and crude excess mortality of adult and paediatric intensive care unit patients with and without device-associated healthcare-acquired infection

Adult and paediatric ICUs combined	No. of deaths	No. of patients	Pooled crude mortality, % (95% CI)	RR (95% CI)
Crude mortality of patients without DA-HAI	1,616	6,408	25.2 (24.1- 26.3)	1.0
Crude mortality of patients with CLABSI	133	357	37.3 (32.2- 42.4)	1.5 (1.2 – 1.8)
Crude excess mortality of patients with CLABSI	133	357	12.0 (8.1- 16.1)	-
Crude mortality of patients with CAUTI	55	154	35.7 (28.1- 43.8)	1.4 (1.1 – 1.9)
Crude excess mortality of patients with CAUTI	55	154	10.5 (4.0- 17.5)	-
Crude mortality of patients with VAP	253	567	44.6 (40.4- 48.8)	1.8 (1.6 – 2.0)
Crude excess mortality of patients with VAP	253	567	19.4 (16.3- 22.5)	-
Neonatal ICUs combined	**No. of deaths**	**No. of patients**	**Pooled crude mortality, % (95% CI)**	
Crude mortality of patients without DA-HAI	68	1,964	3.5 (2.7- 4.4)	1.0
Crude mortality of patients with CLABSI	10	53	18.9 (9.4- 32.7)	5.5 (2.8 – 10.6)
Crude excess mortality of patients with CLABSI	10	53	15.4 (6.7- 28.3)	-
Crude mortality of patients with VAP	6	43	14.0 (5.3- 27.9)	4.0 (1.8 – 9.3)
Crude excess mortality of patients with VAP	6	43	10.5 (2.6- 23.5)	-

ICU, intensive care units; CI, confidence interval; DA-HAI, device-associated healthcare-acquired infection; CLABSI, central line-associated bloodstream infection; VAP, ventilator-associated pneumonia; CAUTI, catheter-associated urinary tract infection; RR, relative risk.

- Ekstra YBÜ'nde kalış
- KİKDE: 13.1
- VİP:16.2

Table 12 Pooled means of the distribution of the length of stay and crude excess length of stay of intensive care unit patients with and without device-associated healthcare-acquired infection

Adult and paediatric ICUs combined	LOS, total days	No. of patients	Pooled average. LOS, days (95% CI)	RR (95% CI)
LOS of patients without DA-HAI	50 716	6,408	7.9 (7.8-7.9)	
LOS of patients with CLABSI	6,920	357	19.4 (17.5-21.6)	2.4 (2.4 – 2.5)
Extra LOS of patients with CLABSI	6,920	357	11.5 (9.7-13.7)	
LOS of patients with CAUTI	2,769	154	18.0 (15.4-21.2)	2.3 (2.2 – 2.3)
Extra LOS of patients with CAUTI	2,769	154	10.1 (7.6-13.3)	
LOS of patients with VAP	9,426	567	16.6 (15.3-18.1)	2.1 (2.0 – 2.1)
Extra LOS of patients with VAP	9,426	567	8.7 (7.5-10.2)	
Neonatal ICUs combined	**LOS, total days**	**No. of patients**	**Pooled average LOS, days**	
LOS of patients without DA-HAI	17,547	1,964	8.9 (8.5-9.3)	
LOS of patients with CLABSI	1,169	53	22.1 (16.9-29.5)	2.6 (2.3 – 2.6)
Extra LOS of patients with CLABSI	1,169	53	13.1 (16.9-9.5)	
LOS of patients with VAP	1,081	43	25.1 (18.7-35.7)	2.8 (2.6 – 3.0)
Extra LOS of patients with VAP	1,081	43	16.2 (18.7-35.7)	

LOS, length of stay; DA-HAI, device-associated healthcare-acquired infection; CLABSI, central line-associated bloodstream infection; VAP, ventilator-associated pneumonia; CAUTI, catheter-associated urinary tract infection.

- Medikal YBÜ'nde KİKDE oranları INICC ve NHSN rapor oranından hayli yüksek
- Aynı şey VİP ve KİİYE için de geçerli

Table 14 Benchmarking of device-associated healthcare-acquired infection rates in this report against the report of the International Nosocomial Infection Control Consortium (2007–20012) and the report of the US National Healthcare Safety Network Data (2011)

	This report	INICC report (2007–2012) [10]	U.S. NHSN report (2011) [5]
Medical surgical ICU			
CL, DUR	0.65 (0.65 – 0.65)	0.54 (0.54 – 0.54)	0.35 (0.35 – 0.35)
CLABSI rate	8.5 (8.0 – 9.1)	4.9 (4.8 – 5.1)	0.9 (0.8 - 0.9)
MV, DUR	0.54 (0.54 – 0.54)	0.36 (0.36 – 0.36)	0.24 (0.24 – 0.24)
VAP rate	22.3 (21.3 - 23.2)	16.5 (16.1 – 16.8)	1.1 (9.8 - 1.2)
UC, DUR	0.88 (0.88 – 0.88)	0.62 (0.62 – 0.62)	0.54 (0.54 – 0.54)
CAUTI rate	7.9 (7.5 - 8.4)	5.3 (5.2 – 5.8)	1.2 (1.1 - 1.3)
Paediatric ICU			
CL, DUR	0.40 (0.40 – 0.41)	0.50 (0.50 – 0.50)	0.47 (0.46 – 0.47)
CLABSI rate	9.5 (7.9 – 11.3)	6.1 (5.7 – 6.5)	1.8 (1.6 - 1.9)
MV, DUR	0.53 (0.53 – 0.54)	0.53 (0.53 – 0.53)	0.40 (0.40 – 0.40)
VAP rate	11.7 (10.2 - 13.5)	7.9 (7.4 – 8.4)	1.1 (9.0 - 1.2)
UC, DUR	0.34 (0.34 – 0.35)	0.31 (0.31 – 0.32)	0.23 (0.22 – 0.23)
CAUTI rate	6.6 (5.2 - 8.4)	5.6 (5.1 – 6.1)	3.1 (2.7 - 3.5)
Neonatal ICU (weight 1501 to 2500 grams)			
CL, DUR	0.09 (0.09 – 0.10)	0.21 (0.20 – 0.21)	0.18 (0.18 – 0.19)
CLABSI rate	7.8 (3.4 – 15.4)	4.8 (3.7 – 6.1)	0.7 (0.6 - 0.9)
MV, DUR	0.12 (0.11 – 0.13)	0.10 (0.10 – 0.11)	0.07 (0.07 – 0.07)
VAP rate	14.4 (8.7 - 22.5)	10.7 (8.4 – 13.4)	0.5 (0.2 - 0.9)

ICU, intensive care unit; CLABSI, central line-associated bloodstream infection; VAP, ventilator-associated pneumonia; CAUTI, catheter-associated urinary tract infection; DUR, device use ratio; INICC, International Nosocomial Infection Control Consortium; U.S. NSHN, National Healthcare Safety Network of the United States of America.

Table 15 Benchmarking of antimicrobial resistance rates in this report against the report of the International Nosocomial Infection Control Consortium (2007–20012) and the report of the US National Healthcare Safety Network Data (2009–2010)

Pathogen, antimicrobial	This report resistance % (CLABSI)	INICC 2007–2012 resistance % (CLABSI)	NHSN 2009–2010 resistance, % (CLABSI)
Staphylococcus aureus			
Oxacillin	92.7%	61.2%	54.6%
Enterococcus faecalis			
Vancomycin	5.0%	12.2%	9.5%
Pseudomonas aeruginosa			
Ciprofloxacine	35.3%	37.5%	30.5%
Piperacillin or piperacillin-tazobactam	27.6%	33.5%	17.4%
Amikacin	18.9%	42.8%	10.0%
Imipenem or meropenem	37.1%	42.4%	26.1%
Klebsiella pneumoniae			
Ceftriaxone or ceftazidime	55.7%	71.2%	28.8%
Imipenem or meropenem	6.3%	19.6%	12.8%
Acinetobacter baumanii			
Imipenem or meropenem	56.1%	66.3%	62.6%
Escherichia Coli			
Ceftriaxone or ceftazidime	55.2%	65.9%	19.0%
Imipenem or meropenem	4.4%	8.5%	1.9%
Ciprofloxacine	66.2%	69.3%	41.8%

CLABSI, central line-associated bloodstream infection.

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Major article

Evaluation of the effectiveness of an infection control program in adult intensive care units: A report from a middle-income country

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Key Words:
Health care-associated infection
Multidrug resistant organism
Antibiotic consumption
Hand hygiene

Background: The rates of hand hygiene improvement and health care–associated infections (HAIs) were evaluated after the introduction in 2004 of an infection surveillance and prevention program at a university teaching hospital in a low- to middle-income country.

Methods: Data on hand hygiene compliance, HAI rate, multiresistant organisms, and antibiotic consumption in 4 adult intensive care units (ICUs; medical, general surgery, anesthesiology and reanimation, and neurosurgery) were collected retrospectively for each year from 2004 to 2012. Negative binomial regression modeling with a log link was used to adjust for overdispersion in observations, and the first year of observations served as the baseline for comparing changes in incidence rate ratio (IRR) over the subsequent years.

Results: Total hand hygiene compliance improved from 30.5% in 2004 to 43.5% by 2010 (IRR, 1.3;

- El hijyeni ve hastane kaynaklı enfeksiyon oranlarının 2004'ten sonraki durumu
  - Enfeksiyon sürveyans ve önleme programının uygulanmaya başlamasının ardından
- El hijyenine uyum, HAİ oranları, dirençli mikroorganizmalar ve antibiyotik tüketimi
  - 4 YBÜ
  - 2004-2012 yılları arasında yıllık

- El hijyenine uyum: 2004'te %30.5, 2012'te %63.8 (p<0.0001)
- HAİ hızı: 2004'te 42.6/1000, 2012'de 33.6/1000 hasta günü (p<0,001)
- KİKDE: 2004'te 7.85/1000, 2012'de 12.4/1000 kateter günü (p=0.024)
- VİP: 2004'te 31.66/1000, 2012'de 24.4/1000 ventilatör günü (p=0.574)
- KİİYE: 2004'te 7.92/1000, 2012'de 4.97/1000 kateter günü (p=0.101)

- MRSA enfeksiyon hızında azalma
- *P.aeruginosa* enfeksiyon hızında azalma
- *A.baumannii* enfeksiyon hızında azalma
- Antibiyotik tüketiminde kayda değer düşüş yok ☹

ENFEKSİYON FİZYOPATOLOJİSİ

Could there be an association between chronic brucellosis and endothelial damage?

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Abstract

Introduction: In this study, we examined the effects of *Brucella* infection on endothelial dysfunction. Flow-mediated dilatation (FMD) measurement is indicator of the endothelial function, and abnormal values indicating endothelial dysfunction are accepted as the first stage of atherosclerosis.

Methodology: Twenty-four patients who had been treated for acute brucellosis two years before, and who had had no relapses in the follow-up, were prospectively included in the study, along with 30 healthy individuals in the control group. Results: While the highly sensitive C-reactive protein (hs-CRP) value was 2.42 ± 1.45 in the patient group, it was 1.72 ± 0.61 in the control group ($p = 0.025$). While the FMD value was 3.50 ± 1.58 in the patient group, it was 5.88 ± 1.88 in the control group ($p < 0.001$). While the percentage increase in FMD was 9.88 ± 4.92 in the patient group, it was 17.49 ± 6.3 in the control group ($p < 0.001$). It was observed that FMD value, the percentage increase in FMD, and basal radius were correlated with hs-CRP ($r = -0.644$, $p < 0.001$; $r = - 0.558$, $p = 0.002$; $r = 0.444$, $p = 0.018$, respectively). The carotid artery intima media thickness (IMT) value was found to be 0.61 ± 0.17 in the patient group and 0.49 ± 0.12 in the control group ($p = 0.004$).

Conclusions: The abnormal FMD and IMT values observed in brucellosis patients might be an indicator of more frequent arterial dysfunction, increased cardiovascular risk, and atherosclerosis.

Key words: brucellosis; atherosclerosis; endothelial dysfunction; hs-CRP.

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- *Brucella* enfeksiyonunun endotelyal disfonksiyon yapıcı etkisinin araştırılması
- Flow-mediated dilatation (FMD), endotelyal disfonksiyonun göstergesi
- Karotis arter intima media kalınlığı (IMT)
- >2 yıl akut bruselloz için tedavi görmüş 24 hasta/ 30 kontrol

Table 1. Demographic characteristics of the patients

	Brucellosis (n = 24)	Control (n = 30)	p
Gender Male/female (*n*/*n*)	1.32 ± 0.48 15/9	1.62 ± 0.50 20/10	0.031*
Age (years)	39.89 ± 9.57	36.77 ± 3.57	0.116
Height (m)	1.71 ± 0.08	1.65 ± 0.07	0.013*
Weight (kg)	78.20 ± 12.41	72.62 ± 20.61	0.239
Body mass index (kg/m2)	26.96 ± 4.66	26.57 ± 7.31	0.817
Basal systolic blood pressure (mmHg)	121.07 ± 14.99	115.00 ± 14.06	0.148
Basal diastolic blood pressure (mmHg)	78.57 ± 9.70	75.00 ± 8.59	0.175

Table 2. Patients' laboratory and echochardiographic results

	Brucellosis (n = 24)	Control (n = 30)	p
Total cholesterol (mg/dL)	182.25 ± 34.65	173.81 ± 26.06	0.314
Triglyceride (mg/dL)	156.64 ± 63.89	101.73 ± 48.96	0.001*
HDL (mg/dL)	40.68 ± 9.56	47.65 ± 10.05	0.012*
LDL (mg/dL)	110.39 ± 31.07	109.54 ± 23.60	0.909
Glucose (mg/dL)	98.46 ± 13.99	94.04 ± 6.62	0.141
Creatinine (mg/dL)	0.79 ± 0.12	0.80 ± 0.13	0.639
ALT (mg/dL)	26.14 ± 17.53	19.85 ± 11.01	0.118
Hs-CRP (mg/L)	2.42 ± 1.45	1.72 ± 0.61	0.025*
FMD	3.50 ± 1.58	5.88 ± 1.88	< 0.001*
IMT	0.61 ± 0.17	0.49 ± 0.12	0.004*
FMD (%)	9.88 ± 4.92	17.49 ± 6.37	< 0.001*
Basal diameter	36.64 ± 5.70	34.19 ± 4.23	0.078
Peak diameter	40.14 ± 5.78	40.08 ± 4.60	0.963
EF (%)	67.03 ± 8.86	68.38 ± 4.69	0.490

ALT: alanine aminotransferase; EF: ejection fraction; FMD: flow-mediated dilatation; HDL: high-density lipoprotein; hs-CRP: high-sensitivity C-reactive protein; IMT: carotid intima media thickness; LDL: low-density lipoprotein.

- Brusellozlu hastalarda anormal FMD ve IMT ölçümleri
- Sonuçlar, brusellozlu hastalarda daha sık arteriyel disfonksiyon, ateroskleroz ve artmış kardiyovasküler risk ile uyumlu

TANI YÖNTEMLERİ

Open Access

Original Article

The role of multiplex PCR test in identification of bacterial pathogens in lower respiratory tract infections

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ABSTRACT

Objectives: Lower respiratory tract infection is one of the most important causes of morbidity and mortality. However establishing a microbial diagnosis for patients with lower respiratory tract infection is still challenging and is often achieved in only half of cases by conventional methods. This study was designed to compare the fast responsive PCR method with the culture method in lower respiratory tract infections and to evaluate the reliability of multiplex PCR method.

Methods: One hundred ninety seven patients with the symptoms of acute lower respiratory tract infection, and diagnosed with community-acquired pneumonia, acute exacerbation of chronic obstructive pulmonary disease and exacerbations of bronchiectasis were included in the study. Both culture and PCR methods was performed for the isolation of most commonly seen bacteria, from sputum, nasopharyngeal swabs and bronchoalveolar lavage fluid samples.

Results: While at least one bacterial isolation was determined in 62 (31.5%) of all patients with culture method, this number increased to 125 (63.5%) with multiplex PCR. The bacteria most commonly identified by PCR were S. pneumoniae (32%) and H. influenzae (31%). There was a significant difference between PCR and culture in terms of multi-factor detection rates ($p < 0.005$). Multiple bacteria were detected in only two cases in cultures; however, multiple pathogens were detected in 47 cases with PCR.

Conclusions: Conventional methods, such as culture and serology are not always adequate to detect the pathogens in lower respiratory tract. Real-time PCR assays proved highly sensitive and rapid. The prevalence of bacteria and multiple agent detected by real-time PCR compared with culture was substantially higher. Widespread use of PCR methods, by providing the immediate and appropriate ''agent specific antibiotic treatment'' of LRTI, will help reduce failure and contributes to a reduction in antibiotic resistance.

KEY WORDS: Bacterial etiology, Culture, Lower respiratory tract infection, PCR.

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AMAÇ

- Alt solunum yolu enfeksiyonlarında kültür yöntemleri ile PZR yöntemlerini karşılaştırmak ve multipleks PZR'nin güvenilirliliğini değerlendirmek

Table-I: General characteristics of the patients included in the study.

	n (%)
Patient	197
Male	117(59.4)
Female	80(40.6)
Diagnosis	
CAP	147(74.6)
AECOPD	42(21.3)
Bronchiectasis	8(4.1)
Sample	
NFS	45(22.8)
Sputum	141(71.6)
BAL	11(5.6)
	Mean(±SD)
Age	40 (±23)
CRP	45.4 (±58)
Leucocyte	11.0 (±4.5)
Sedimentation	37 (±25)

CAP: community-acquired pneumonia,
AECOPD: acute exacerbation of chronic obstructive pulmonary disease,
NFS: Nasopharyngeal swabs,
BAL: bronchoalveolar lavage,
CRP:C-reactive protein.

Table-II: The distribution of microorganisms isolated in the culture according to diagnosis.

n (%)	*Total*	*CAP*	*AECOPD*	*Bronchiectasis*
No isolated	65 (33.0)	57(38.8)	6(14.3)	2(25.0)
Normal flora	70 (35.5)	48(32.7)	18(42.9)	4(50.0)
S.pneumoniae	32 (16.2)	23(15.6)	8(19.0)	1(12.5)
M.catarrhalis	12 (6.1)	8(5.4)	4(9.5)	-
S. aureus	6 (3.0)	5(3.4)	1(2.4)	-
K. pneumoniae	5 (2.5)	-	4(9.5)	1(12.5)
E. coli	5 (2.5)	4(2.7)	1(2.4)	-
S.pneumoniae+ M.catarrhalis	1 (0.5)	1(0.7)	-	-
S.aureus+P.aeruginosa	1 (0.5)	1(0.7)	-	-

CAP: community-acquired pneumonia, AECOPD: acute exacerbation of chronic obstructive pulmonary disease.

Table-III: The distribution of the microorganisms detected by PCR according to diagnosis.

PCR results (n/%)	*Total*	*CAP*	*AECOPD*	*Bronchiectasis*
Negative	72(36.5)	58(39.5)	13(31)	1(12.5)
S.pneumoniae	30(15.2)	23(15.6)	6(14.3)	1(12.5)
S.pneumoniae+H.influensae	29(14.7)	23(15.6)	6(14.3)	-
H.influensae	25(12.7)	15(10.2)	7(16.7)	3(37.5)
M.pneumoniae	5(2.5)	5(3.4)	-	-
M.catarrhalis	5(2.5)	2(1.4)	3(7.1)	-
E.coli	4(2)	3(2)	1(2.4)	-
H.influenzaetipb +M.catarrhalis	4(2)	3(2)	1(2.4)	-
S.pneumoniae+M.catarrhalis	4(2)	3(2)	-	1(12.5)
S.aureus	4(2)	4(2.7)	-	-
H.influenzae tip b	3(1.5)	1(0.7)	1(2.4)	1(12.5)
H.influenzae+M.catarrhalis	3(1.5)	3(2)	-	-
H.influenzae+K.pneumoniae	2(1)	-	1(2.4)	1(12.5)
K.pneumoniae	2(1)	-	1(4.8)	1(12.5)
H.influenzaetipb+C.pneumoniae	1(0.5)	1(0.7)	-	-
H.influenzae tip b+S.aureus	1(0.5)	-	1(2.4)	-
H.influenzae+E.coli	1(0.5)	1(0.7)	-	-
H.influenzae+S.aureus	1(0.5)	1(0.7)	-	-
M.catarrhalis+S.aureus	1(0.5)	1	-	-
Total	197	147	42	8

CAP: community-acquired pneumonia, AECOPD: acute exacerbation of chronic obstructive pulmonary disease.

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Title: Are there standardized cutoff values for neutrophil-lymphocyte ratios in bacteremia or sepsis?

Article Type: Research article

Keywords: Procalcitonin (PCT), Neutrophil-lymphocyte ratio (NLR), Bacteremia, Sepsis

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- Bakteremi ve sepsisin erken, hızlı ve düşük maliyetli tespiti
- Nötrofil/lenfosit oranının (NLR), prokalsitonin (PCT) ile karşılaştırılması
- Retrospektif
- 1468 hasta
- PCT seviyeleri: <0.05, 0.05-0.5, 0.5-2, 2-10, >10 ng/ml
- NLO >5 enfeksiyon ve sepsis ile ilişkilendirilebilir
  - Eğer yeterli dışlama kriterleri sağlandıysa

Table 1 ROC analysis results for CRP, WBC and NLR.

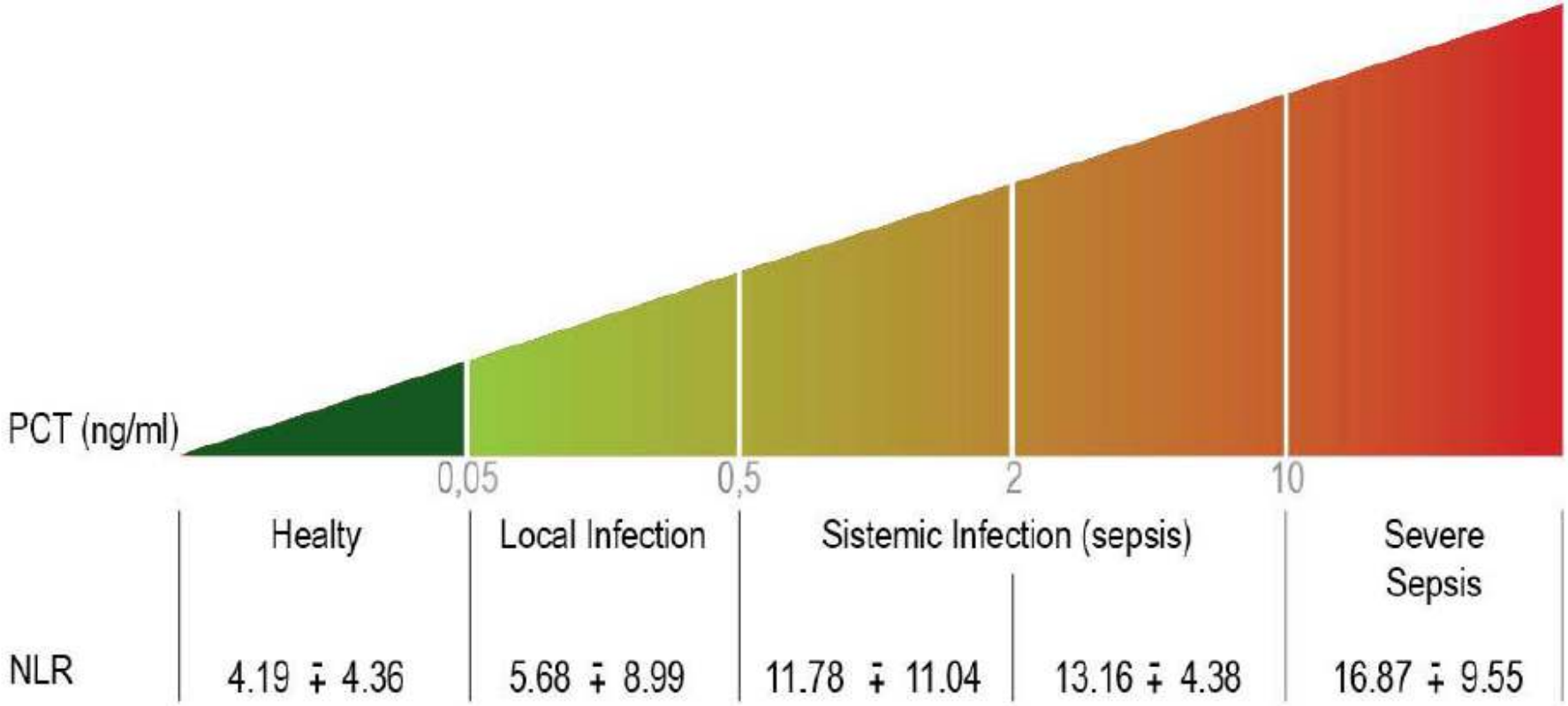
	Sensitivity	Specificity	AUC*	95% CI**	*p-value*
CRP	50.1	76.8	0.643	0.600-0.685	0.0065
WBC	55.4	81.3	0.682	0.642-0.721	0.0008
NLR	57.8	83.9	0.751	0.713-0.786	0.0001

* AUC; Area under the ROC curve, ** CI; Confidence interval (binominal exact).

Table 2 Distribution of PCT, CRP, WBC, and NLR values in the HG, LIG, SIG, SG and SSG groups.

Group	n (%)	[A]PCT	[B]CRP	[C]WBC	NLR	[D]NLR cutoff
HG	203 (28.88)	0.04±0.01	29.34±41.98	9117±2832	4.19±4.36	<5
LIG	242 (34.59)	0.15±0.07	70.19±66.94	10543±4976	5.68±8.99	≥5-<10
SIG	113 (16.13)	1.08±0.44	121.25±102.09	13914±1072	11.78±14.04	≥10-<13
SG	81 (11.56)	4.64±2.13	137.97±114.09	13048±7768	13.16±6.38	≥13-<15
SSG	62 (8.84)	34.34±31.89	161.13±145.65	16014±11686	16.87±9.55	≥15
p-value*		<0.001	<0.001	<0.05	<0.001	

[A]ng/mL, [B]mg/L, [C]Count in mm^3, [D]Recommended cutoff values, *One-way ANOVA.


PCT (ng/ml)
0,05
0,5
2
10
Healty
Local Infection
Sistemic Infection (sepsis)
Severe Sepsis
NLR
4.19 ± 4.36
5.68 ± 8.99
11.78 ± 11.04
13.16 ± 4.38
16.87 ± 9.55

AŞILAR

RESEARCH ARTICLE

Awareness and Attitude Relating to the Human Papilloma Virus and its Vaccines Among Pediatrics, Obstetrics and Gynecology Specialists in Turkey

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Abstract

Background: To determine the level of knowledge on human papillomavirus (HPV) infection and vaccination, and the attitude towards HPV vaccination in pediatricians, obstetricians and gynecologists (OBG). Materials and Methods: Participants were administered a 40-question survey, investigating the demographic properties, the knowledge on the HPV infection-vaccination and attitudes towards vaccination. Results: The study enrolled a total of 228 participants (131 pediatricians and 97 OBGs). At a rate of 99.6%, the participants agreed with the fact that the HPV infection was the most common sexually transmitted disease and 33.8% of the participants had the opinion that the HPV vaccination should be administered only in women. The lowest level of HPV vaccine recommendation was among the pediatrics specialists (59.4%, p=0.012). When asked whether they would have their daughters receive HPV vaccination, 79.5% of the participants answered favorably; this rate was 36.7% for the sons. At a rate of 59.5% of the participants thought that the HPV vaccine needed to be included in the national vaccine schedule. Most of the participants (91.6%) had the idea that reduction of the vaccine costs would increase the vaccination frequency. Conclusions: We observed that the consideration of the costs and the prejudices relating to the inefficacy of vaccination as well as the inadequate level of knowledge were involved in the physicians' resistance to HPV vaccination. We believe that the healthcare professionals should be informed adequately to overcome false beliefs, thereby ensuring success of the HPV vaccine upon inclusion in the national vaccine schedule in the future.

Keywords: Attitude - awareness - human papillomavirus - immunization - obstetrics & gynecology - pediatrics - vaccines

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- HPV enfeksiyonu, aşılaması ve yaklaşımı konusunda bilgi seviyesinin değerlendirilmesi
  - Pediatrist ve KDH uzmanları
- 40 soruluk anket
- 228 katılımcı
  - 131 pediatrist, 97 KDH uzmanı
- %33.8'I sadece kadınlara yapılması gerektiği düşüncesinde
  - Kendi kız çocuklarını %79.5, erkek çocuklarını %36.7 oranında aşılama isteği
- Aşıyı en düşük öneren grup pediatristler (%59.4)
- %59- aşı ulusal programa girsin
- %91.6- aşının fiyatı düşerse daha çok kişi aşı olur

Table 1. Demographic Characteristics of the Participants Filling Out the Survey

Characteristics	n (%)
Age* (years)	33.8±8.2
Gender	
Male	113 (49.8%)
Female	114 (50.2%)
Sub-specialty	
Pediatric resident	67 (51.1%)
Pediatric specialist	64 (48.9%)
Obstetrics&gynecology resident	51 (52.6%)
Obstetrics&gynecology specialist	46 (47.4%)
Practice setting	
University hospital	36 (15.9%)
Research and Training hospital	135 (59.5%)
Government hospital	27 (11.9%)
Private hospital	29 (12.8%)
Occupational experience* (years)	
Pediatric resident	2.44±1.44
Pediatric specialist	8.35±5.7
Obstetrics&gynecology resident	2.28±1.17
Obstetrics&gynecology specialist	12.91±8.57
Marital status	
Married	150 (65.8%)
Single	78 (34.2%)
Children	
Boy	32 (29.6%)
Girl	47 (43.5%)
Boy and girl	29 (26.9%)

*Mean±standard deviation

Table 2. Reasons for Not Preferring the HPV Vaccine

	For Patients	For Her/his daughter	For Her/his son
Costs	67.7%	28.9%	29.4%
Side effects	11.3%	17.8%	7.9%
Lack of efficacy	45.2%	64.4%	70.6%
Other	6.5%	17.8%	9.5%

Table 3. Favor HPV Vaccine for Specific Groups

	Herself	Her/his girl	Her/his son	Patients
Pediatric resident	67.6%	82.8%	25.8%	80.6%
Pediatric specialist	57.1%	79.7%	38.3%	59.4%
Obstetrics&gynecology resident	62.5%	68.8%	33.3%	66.7%
Obstetrics&gynecology specialist	71.4%	86%	45.6%	82.6%

SAYGILARIMLA

Nisan'da
Adana'da