HOSPITAL INFECTIONS

Dr. Kaya Süer

Yakın Doğu University Faculty of Medicine

Infections Diseases and Clinical Microbiology


Cumaları serbest kıyafet.
Haberim yoktu.

HEALTHCARE ASSOCIATED INFECTIONS

- PRİMUM NON NOCERE
- FIRST DO NOT HARM
- Sir James Simpson

HEALTHCARE ASSOCIATED INFECTIONS

- Hospital infections (Hİ) show changes with each passing day

- Nosocomial Infections = Hospital Infections
  Healthcare associated infections

HI Definitions

- Infections may occur;
- ✓ After the patients apply to the hospital or
- ✓ At that time of application its not in the incubation period
- ✓ Although the infections start in hospital, Infections may occur after discharge

HI Definitions

- The patient admitted to the hospital; after 48-72 hours
- Non-operated patients discharged; after 10 days
- Operated patients discharged; within 30 days in post of surgical field
- If patients had implanted devices; infections may occur within 1 years

HI

- Urinary tract infection
- Surgical site infection
- Pneumoniae; VAP (VİP)
- Bacteremia
- Cardiovascular system infections
- Central nervous system infections
- Others (bones-joint, ear-nose-throat, gastrointestinal system, etc.)

HI causes to

- Elongation of hospital staying
- Increasing of morbidity ve mortality
- Deterioration in the quality of life
- Loss of labor force and productivity
- Increasing of RESİSTANCE
- Increasing of cost

HI

- The factors that determine the avarage cost of hospital infections:
  - Types and localization of infections
  - Resistance to antibiotics
  - Rate of infections
- Cost of hospital infections in one patient → 1.500-2.000 $
- In pediatrics patients 10.000 $

HI

- In different studies ,additional hospitalization period are between 4-34 days, average 10 - 20 days
  - Bacteremia 7 – 21 days
  - Surgical site 7 – 8 days
  - VAP 6-7 days
  - Urinary tract system 1-3 days

HI

- Study on the efficacy of nosocomial infection control (SENIC)
- In 250 beds capacity of hospital
  - Annually HI; 524 case
  - Additional hospitalization; 2000 days,
  - Additional mortality; 20 case
  - Additional cost; 1 million $
  - If spend approximately 60.000 $ for the infection prevention, result is different

HI

- HI rates decreased about % 32
- Preventable of 168 HI
- Blocked additional hospitalization in 640 days
- Blocked additional mortality 6.3
- Hospital earned 260.000 $
- If we decreased HI rates % 50 hospital earned 440.000 $

HI Turkey

- Patients which developed of hospital infections:
  - Elongation 1-35 days in hospitalization
  - Increasing %19.6 of Mortality
  - Increasing 2280 dolars of cost

Short History of HI

- 1877 - proposals of isolation measures in first published
- The emergence of the“Infections Diseases Hospitals”
- Separate place of receipt the infections diseases of the patients
- Use of aseptic technique for prevent transmission of the diseases

HI

- From the year 1910;
- Wearing apron to the hospital staff
- After the hospital contact , hand hygine with antiseptic solutions between patients
- Disinfection of environment of patients

HI

- British Medical Research Council
  - 1941 → Doctor of Infection control
  - 1944 → Committee of Infection control
  - 1959 → Nurses of Infectıon control
- 1965-1966 → The pilot study in USA
- 1970 → National Nosocomial Infections Surveillance System (NNIS)

HI

- Legal basis; In Turkey
  - 1974: The Regulation Of The Medical Expertise (Infections committee and dutys)
  - 1983:Regulations of Operating Inpatient Treatment Institutions
  - 2005: Regulation of Infections Control
- The establishment of the hospital infection control committees in Turkey
- 1984:Hacettepe Univesity Faculty of Medicine
  - 1985:İstanbul University Faculty of Medicine
  - Other university and goverment hospital, private hosp.

HI= Medical error

- The basic purpose in the approach of the patient safety providing changes in the presentation health services
- The most important steps are classification detection and reduction of the errors
- In the new situation, nosocomial infections accept as side effect , The goal of the paient safety is “zero” nosocomial infection

HI New Goals

- The main subject is **prevention**!
- Hospital Infections= **Medical Error**
- Success = Minimize the error- **“0” error**
- **2000 years !!!**

HI New Concept

- Cultural Exchange (patient safety)
- The Processes Of Change

Patient Safety

- **Patient Safety:** Prevent the errors depending on the health service and eliminate the patient injury depending on the health service or minimize it

- **Medical Errors depending of health service:** During the health service, caused of unexpected results

Patient Safety

- In USA between 2000 and 2002 years in 37 million patient hospitalized, find the 1.14 million (%3.08) patients safety errors.

- The main factors of the patient safety
- **Do not identify the diagnosis in correct time,**
- **Do not start the treatment ,**
- **Development of decubitus ulcer and post-operatif sepsis**.
- These 3 cases enclose the % 60 of all errors patients safety.

Patient Safety

T.C.
SAĞLIK BAKANLIĞI
Refik Saydam Hıfzıssıhha Merkezi Başkanlığı

DEĞERLENDİRME RAPORU

TÜRKİYE
SAĞLIKTA DÖNÜŞÜM PROGRAMI
EKİM 2010

TÜRKİYE'DE
HASTANE ENFEKSİYONLARININ ÖNLENMESİ
VE KONTROLÜ ÇALIŞMALARI

HASTANE ENFEKSİYONLARI BİLİMSEL DANIŞMA KURULU
REFİK SAYDAM HIFZISSIHHA MERKEZİ BAŞKANLIĞI

APIC

APIC published the guidelines for eliminate these infections: 2009

- Ventilator-associated pneumonia, (VAP)
- Catheter-associated urinary tract infections (CA-UTI)
- Catheter-related blood infections (CLABSI)
- MRSA infections, long-term care units
- Acinetobacter baumannii
- **APIC (Association for professionals in infection control and epidemiology)**

Zero Infection

- After using Quality improvement and infection control programmes , It has been showed that HI is decreased serious way
- It is an important role of the published guidelines and infection control.
- However, some of the coercive measures speed up the development

Factors of the Zero Target

- External pressure the group of patients and patients relatives associated with the program of infections committee
- Associated with suboptimal evidence
- Together with the Quality improvement and infection-control concepts

Reach the Zero

- Concept of the “Reach the zero’’ is accepted by the quality improvement programs
- If it’s accepted , infections depends on the health services may be reduced “zero”, so all HI can be preventable
- That’s why, development of the HI are may be errors of the someone else

Concept of the Zero Risk

- Prevent of the infections depending of Health Care needs “zero risk”
- But in this infections, İt ‘s hard to reach “zero risk”
- İnfection risk change depends on the ,clinical stiuation of the patients, the severity of the disease and hospitalization of the period.
- It is not possible ‘’zero’’ of these multi-factors risk.

Stimulates factors of the Zero İnfections

- Health Insurance Companies explain that they do not pay the hospital infections depends in the health services
- Patients and patient relatives, civil society organizations request transparent ,
- It must be explained the hospital infections by the health services

Effects of the Concept of the Zero Infections

With the increased awareness on the importance of reporting the HI cases with full honesty; it has been easier to focus on the problems raised by the subject.

- Planed education,
- Appling evidence based policy with right timing,
- "Checklist" applications,
- Talent Evaluation.

- Other factors that take role in success
  - Raising awareness amongst community leaders,
  - Finding "champions" in the hospital who would own the problem,
  - Increasing the work focused on the system.

Quality improvement, risk management, back payment

"Centers for Medicare and Medicaid Services" decide that not to pay the preventable errors , August 2007.

Desicion to pay the cost

- Objects forgetten during the surgery
- Wrong blood transfusion,
- Air Emboli,
- Fall,
- Mediastinit,
- Uriner system infections depends on the cathater,
- Decubitus ulcer,
- Bacteremia depends on the cathater

Zero Tolerance

- “Zero tolerance”is a term used against the passive standing of hospital workers.
- This term suggest that all health care workers should take action in order to prevent these HI and push their colleagues to apply as well. Therefore all health care workers can be held responsible of their own actions.
- In order to prevent HI and keep patients safety “Zero tolerance” application is very important.

Tolerance ??

Control of the MRSA outbreak in 33 bed newborn unit:

Contamination rates between the patients with contact isolation and other patients: 0,009 contamination/day

Contamination rate between patients with no contact isolation and other patients contact isolation: 0,14 contamination/day

The contact isolation decreased contamination rates by 16 times.

Achievement of Zero Tolerance

- To eliminates HI we should have a theoretical target.
- All the health care workers should know that they are expected to apply the infection prevention techniques perfectly.
- There should be an environment amongst workers where everyone is responsible of HI prevention, with %100 coordination and trust.
- Incapabilities, defects and defficiencies concerning the system and process, should be corrected in a trustworthy and educating enviroment, without the threat of punishment .
- The institution and community should be informed on any outbreaks and the fact that immediate care is being taken.
- In order to achieve immediate elimination of HI, the new information and evaluation should be shared with the health care workers on daily.

Cathater associated infections (CLABSI)

- Results:
  - In 2001, an estimated 43,000 CLABSIs occurred among patients hospitalized in ICUs in the United States.
  - In 2009, the estimated number of ICU CLABSIs had decreased to 18,000.

- Conclusions:
  - In 2009 alone, an estimated 25,000 fewer CLABSIs occurred in U.S. ICUs than in 2001, **a 58% reduction**.
  - This represents up to 6,000 lives saved and $414 million in potential excess health-care costs in 2009 and approximately $1.8 billion in cumulative excess health-care costs since 2001.
- *Vital signs: Central line-associated blood stream infections-United States 2001, 2008, and 2009. MMWR 2011;60:243-48.*

Cathater associated infections (CLABSI)

Quality Digest (http://www.qualitydigest.com), 2011

- ***New York Pediatric ICU Ward Off Central- Line Infections for Entire Year***

- ***"Infection rejection perfection" while treating 1,647 patients***

YAKIN DOĞU ÜNİVERSİTESİ HASTANESİ

ANTİBİYOTİK ONAY FORMU

Hastanın Adı Soyadı:	
Doğum Tarihi:	
Cinsiyeti:	
Servis ve Hasta ID No:	
Yatış Tarihi ve Tanısı:	

1. ve 2. Bölümler klinik hekimi tarafından doldurulacaktır!

1. ANTİBİYOTİK KULLANIM ENDİKASYONU: [illegible]

2. ALTTA YATAN KRONİK HASTALIK

□ D. Mellitus	□ Malignite	□ Böbrek Yetmezliği
□ Karaciğer yetmezliği	□ Diğer (…………………………………)	

3. ENFEKSİYON HASTALIKLARI UZMANI (EHU) NOTU

YAKIN DOĞU ÜNİVERSİTESİ HASTANESİ

ANTİBİYOTİK ONAY FORMU

Klinik hekimin dikkatine !

Enfeksiyon düşündüğünüz hastada UDÖ-72 kapsamına giren bir antibiyotik başlamayı planlıyorsanız; Enfeksiyon etkeninin izolasyonu veya enfeksiyonunun lokalizasyonunu belirlemek için kültür örneklerinin alınması önemlidir.

*** Kan Kültürü (En az iki koldan, iki ayrı enjektör ile aşağı şartlarına uyarak)

*** İdrar Kültürü

*** Pü Kültürü ve diğer kültürler

*** Enfeksiyon odağını ve / veya etkenini belirlemede yardımcı olabilecek her türlü tetkikin (Hemogram Serolojik testler, Sedimentasyon, CRP gibi) alınması önemle rica olunur!

* Kısıtlama olmayan antibiyotikler (KY)
* Uzman hekimin kısıtlama olmadan yazabileceği antibiyotikler (UD)
* Uzman hekimler tarafından yazılabilen ama 72 saat sonra devamında Enfeksiyon Hastalıkları Ve Mikrobiyoloji uzmanı onayı gereken antibiyotikler (UDÖ - 72)
* Sadece Enfeksiyon Hastalıkları Uzmanı'nın yazabileceği antibiyotikler (EHU) belirtilmiştir.

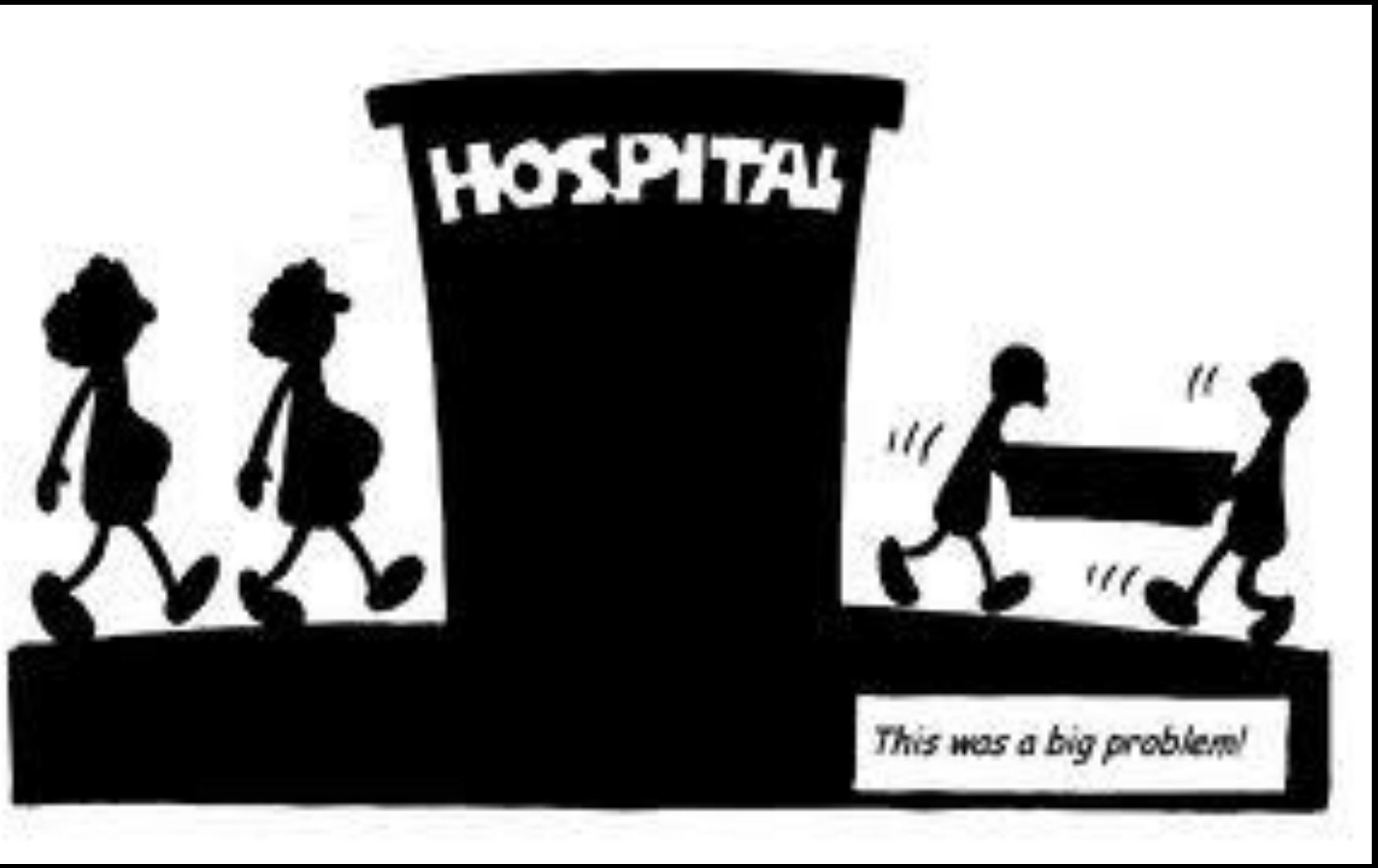
UDÖ - 72 Grubu Antibiyotikler	Enfeksiyon Hastalıkları Uzmanı'nın (EHU) yazabileceği antibiyotikler
Nafsilin	Piperasilin - Tazobaktam
Tikarsilin	Tikarsilin - Klavulonat
Karbenisilin	Sefoperazon - Sulbaktam
Sefodizim	Sefepim
Sefoperazon	İmipenem
Sefotaksim	Meropenem
Seftazidim	Ertapenem
Seftizoksim	İsepamisin
Seftriakson (APAT'ta KY) Bkz. Açıklama	Vankomisin
Aztreonam	Teikoplanin
Amikasin	Linezolid
Netilmisin	Amfoterisin B (klasik)
Tobramisin	Flukonazol (parenteral)
Siprofloksasin (parenteral)	
Ofloksasin (parenteral)	
Pefloksasin (parenteral)	
Piperasilin	
Levofloksasin (parenteral)	
Moksifloksasin (parenteral)	

APAT: "AYAKTAN PARENTERAL ANTİBİYOTİK UYGULAMASI"

Bu uygulama, hastanın ayaktan parenteral antibiyotik tedavisinin uygun olduğunu gösteren "APAT" ibaresinin reçetede belirtilmesi ile işleme alınır. APAT uygulaması sadece, ilacın prospektüsünde yer alan onaylı endikasyonlar için geçerlidir. APAT uygulamasına aşağıdaki durumlar girer:

1. Hastanın mutlaka parenteral tedaviye gereksinimi olması ve durumunun ayaktan tedaviye uygun olması,

2. Hastanın enfeksiyonunun APAT'a uygun olması. Örneğin, kemik ve eklem enfeksiyonları, diyabetik ayak, pnömoni, endokardit, pelvik inflamatuar hastalık, piyelonefrit, gonore, akut bakteriyel otit gibi.


HOSPITAL
This was a big problem!

Don’t forget