

The Pattern of Antiinfection Therapy and its Costs in the Emergency Room in Regional Public Hospital in Kudus city, Indonesia.

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The Emergency Room (ER) is the initial gate for patients to enter the hospital and has a high risk of medication errors. The use of anti infections (especially antibiotics) in patients in the ER needs special attention because the inappropriate use of antibiotics at the beginning of treatment can affect subsequent antibiotic therapy. This study aims to determine the pattern of anti infections used and its cost in the ER of the regional public hospital in Kudus city, Indonesia. The benefit of this research is as input and evaluation for the hospital to improve the quality of pharmaceutical services in terms of drug supply at the ER. The population in this study were all patients who came to the ER in February 2019 (2732 patients) and the number of men and women were 49,24% and 50,76%, respectively. Most patients were at the age of 46-65 years (old people) as many as 822 (30.09%) and the smallest amount was at age of > 65 years (elderly). Anti infections were used for 62,96% patients in ER. Antibiotics were the most used anti infections, but the anti-tetanus serum spent the most money (14,75%). The most antibiotics used in the emergency department are ceftriaxone (for 258 patients, 9,44%) and Cefotaxime (for 240 patients, 8,78%). The total drug cost in February 2019 periode was 139.970.200 rupiahs, Anti infections spend 21,23% and Antibiotics spend 6,33% of the total drug cost. The most expensive anti-infection was Antitetanus serum 1500 IU vac (157.200 rupiahs). Forty-five patients used double antibiotics, ceftriaxone+metronidazole was the most (21 patients) and only 1 patient used triple antibiotics (ceftriaxone+metronidazole+gentamycin). The anti infections were used efficiently in the Emergency Room.

Keywords: antibiotic, anti infection, cost, emergency department



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Introduction



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- ▶ The Emergency Room (ER) is the initial gate for patients to enter the hospital and has a high risk of medication errors.
- ▶ The use of anti infections (especially antibiotics) in patients in the ER needs special attention because the inadequacy of antibiotic treatment for infected patient may lead to an increase in the length of hospital stay, and therefore costs associated (Gonzalez et al., 2017)





AIM



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- ▶ This study aims to determine the pattern of anti-infections used and it's cost in the ER of the regional public hospital in Kudus city, Indonesia.
- ▶ The benefit of this research is as input and evaluation for the hospital to improve the quality of pharmaceutical services in terms of drug supply at the ER



METHODES



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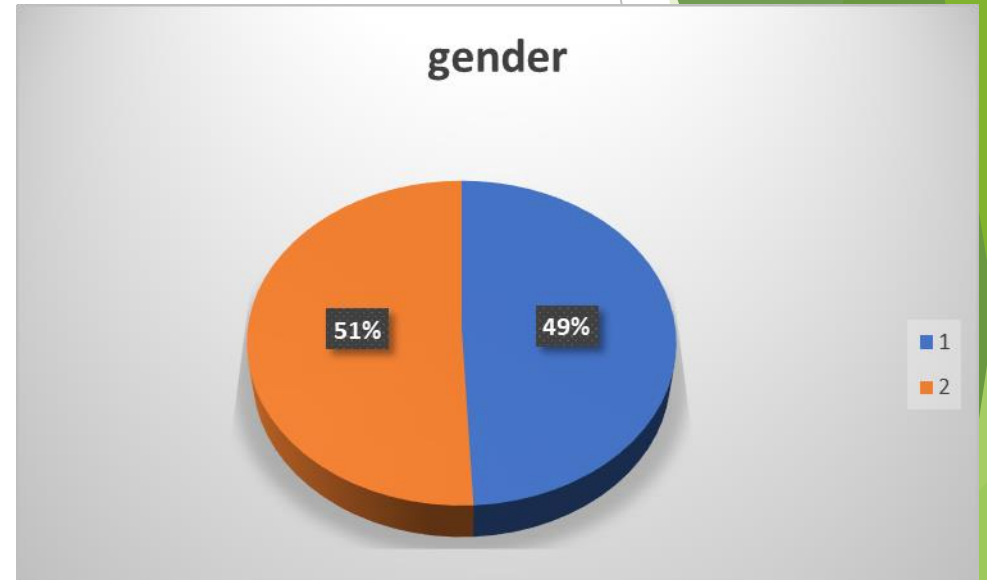
- ▶ The type of research conducted is *descriptive observational* using retrospective data taken from the records of patients.
 - ▶ The Sample is taken using purposive sampling.
 - ▶ Inclusion criteria: all patients who came to Emergency Room of Regional Public Hospital in Kudus city in February 2019
- Exclusion criteria: Patients whose data were incomplete



RESULT n DISCUSSION

Patient's characteristic

M: 1344=49,2
 F: 1388 =50,8
 Gender had no effect to patients admission to ER



Most patients were at the age of 46-65 years (old people) and the smallest amount was at age of > 65 years (elderly).

	Age	amount	%
children	≤ 11 years	605	22,14
adolescent	12-25 years	434	15,89
adult	26-45 years	518	18,96
old	46-65 years	822	30,09
elderly	> 65 years	353	12,92
Total		2732	100



Antiinfections used in 33,34% patients



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- ▶ **Antibiotics:** *cephalosporine:* ceftriaxone, cefotaxime, cefadroxil, ceftazidime, cefixime. Metronidazole, amoxycillin, clindamycin, gentamycin, meropenem, levofloxacin, ciprofloxacin, cotrimoxazole
- ▶ **Anti-fungi:** nystatin drops, fluconazole infuse, ketoconazole tab
- ▶ **Anti-viral:** acyclovir cream and tablet, used for 3 patients
- ▶ **Serum** used in 95 patients, most was ATS, ABU (anti-snake venom) , tetagam (human tetanus immunoglobulin)

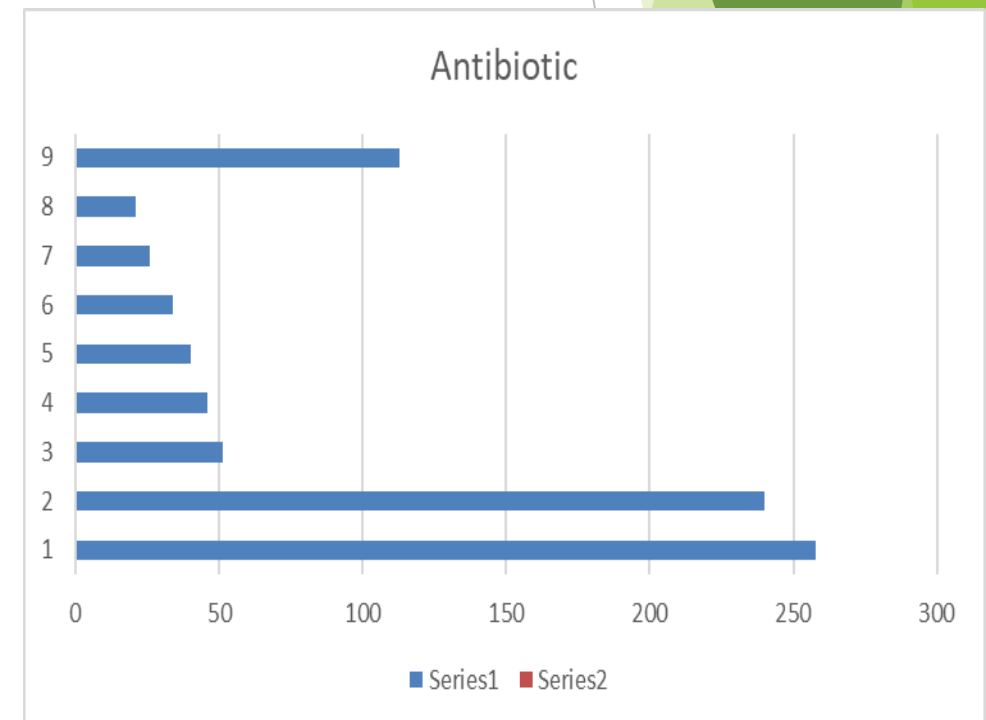


Antibiotics



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- ▶ 1. Ceftriaxone 1 g 258 pt = 9,44%
- ▶ 2. Cefotaxime 1 g 240 pt = 8,78%
- ▶ 3. Cefadroxil 500 mg 51 pt = 1,87%
- ▶ 4. amoxycillin 500 mg
- ▶ 5. metronidazole inf
- ▶ 6. cefixime 100 mg
- ▶ 7. cefadroxil syr
- ▶ 8. levofloxasin inf
- ▶ 9. others





CEFTRIAXONE



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- ▶ Ceftriaxone is a third-generation cephalosporin commonly utilized as an empiric antibiotic treatment option in the emergency room /ER
- ▶ Its pharmacokinetic profile, spectrum of coverage, and tolerability make it an attractive option for use in the emergency room (Durham et al., 2017)



Antibiotic (cont)



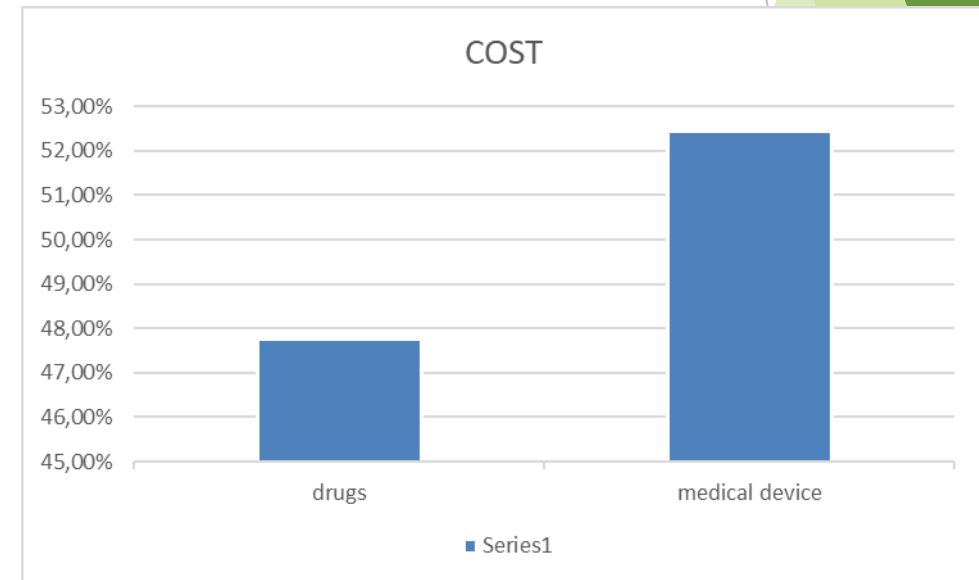
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Double AB (in 45 pt):	ceftriaxone + metronidazole	21 pt
	cefotaxime + metronidazole	10 pt
	cefotaxime + gentamycin	6 pt
Triple AB:	ceftriaxone + metronidazole + gentamycin	1 pt
▶	46pt → irrational	



COST (drug + medical device)

- ▶ The total patients' cost was Rp 293.123.500 and the drugs spent 139.970.200 rupiahs (47,55%), the rest was the medical device's cost, which was higher Rp 153.153.300 (52,45%)





COST (cont)



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- ▶ Anti-infections spend 21,23% of the total drug cost.
- ▶ Antibiotics spend 6,33% of the total drug cost
- ▶ Antibiotics were the most used anti infections, but the anti-tetanus serum spent the most money (14,75%).
- ▶ The most expensive anti-infection: ABU/ anti-snake venom Rp 576.000 used in 11 pt



RESEARCH WEAKNESS




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- We don't take a note of the diagnose of the patients who came to the ER
- We only used 1 month period 
- We don't use QI/Quality Indicators to measure the appropriateness of the AB use



SUMMARY

- ▶ The most antiinfection used: ceftriaxone and cefotaxime
- ▶ The antibiotics were used singly, except in 46 patients (45 pt double AB and 1 pt triple AB) 
- ▶ The most expensive used anti-infections was serum ABU / anti snake venom
- ▶ The antibiotics spent 6,33% of the total drug cost



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