

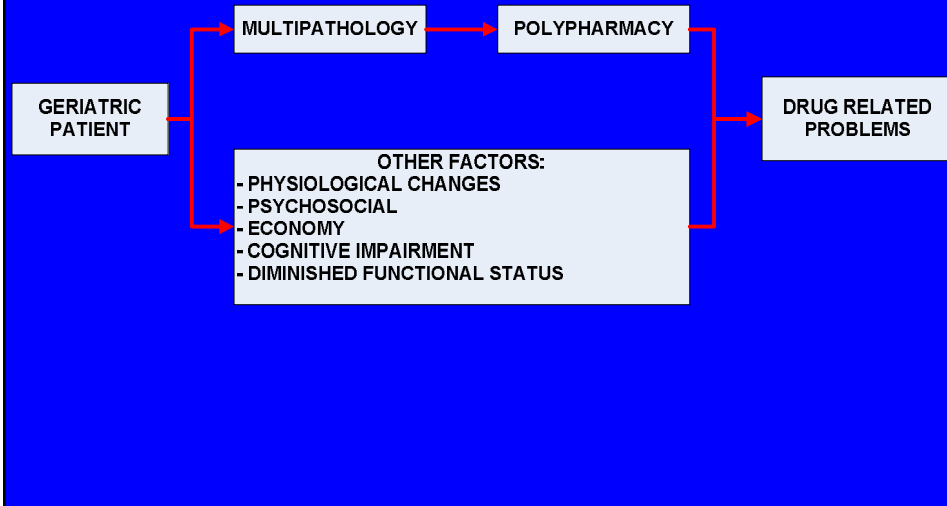


IDENTIFICATION OF DRUG RELATED PROBLEMS IN ELDERLY PATIENTS AT INTERNAL MEDICINE WARD OF CIPTO MANGUNKUSUMO HOSPITAL JAKARTA- INDONESIA

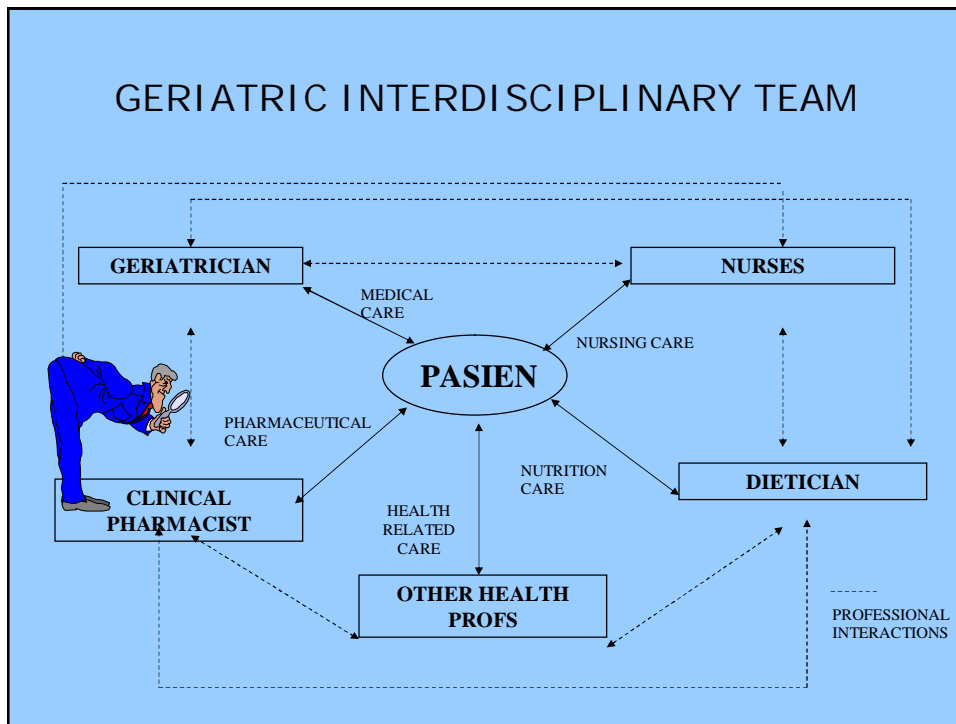
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Background



The 8th Asian Conference on Clinical Pharmacy: "Toward Harmonization of Education and Practice of Asian Clinical Pharmacy"



Objectives

- To identify type of DRPs in the elderly patients hospitalized at internal medicine ward of Cipto Mangunkusumo Hospital
- To identify drugs most frequently contributed to DRPs.
- To alert health care professionals involved in treating elderly patients to optimize drug therapy.

Methods

- Cross sectional, retrospectively
- Data from medical notes of 110 patients obtained:
 - Relevant medical history
 - Physical exam, lab and diagnostic test results
 - Medical problems
 - Drugs used during hospitalization
- DRPs were identified by a clinical pharmacist
- DRPs were discussed with a geriatrician

Operational Definition

- **Drug related problem:**
An event or circumstance involving a patient's drug treatment that actually or potentially interferes with the achievement of an optimal outcome (Hepler and Strand 1990)

Drug related problems

- Untreated indication
- Improper drug selection
- Subtherapeutic dose
- Overdosage
- Adverse drug reaction
- Drug interaction
- Failure to receive drug
- Drug use without indication

Results

Frequency Distribution of patients by sex

Sex	No. of patients (%)
Male	56 (50.9)
Female	54 (49.1)
Total	110 (100)

Results

Frequency Distribution of patients by age

Age Class (year)	No. of patients (%)
60-69	58 (52.7)
70-79	42 (38.2)
80-89	6 (5.5)
90-100	4 (3.6)
Total	110 (100)

Results

Frequency Distribution of medical problems

No	ICD	Diagnosis	No. of patients (%)
1	J99.8	Pneumonia	61 (55.5)
2	I10	Hypertension	56 (50.9)
3	E11	Diabetes mellitus type 2	40 (36.4)
4	I25.1	CHD	39 (35.5)
5	R63.3	Decreased intake	35 (31.8)

Results

- 78.2% of patients were having DRPs
- 248 DRPs were identified
- on average: 3 DRPs per patient (range: 1-9)

Results

DRP	No. of patients (%)	% DRPs
Improper drug selection	59 (53.6)	23.8
Drug interaction	50 (45.5)	20.2
Failure to receive drug	38 (34.5)	15.3
Overdosage	38 (34.5)	15.3
Drug use without indication	24 (21.8)	9.7
Adverse drug reaction	20 (18.2)	8.1
Untreated indication	15 (13.6)	6.0
Subtherapeutic dose	4 (3.6)	1.6

Results

Drugs most frequently contributed to DRPs

No	Drug	Frequency (%)
1	Proton pump inhibitors (Pantoprazole & Omeprazole)	31 (12.5)
2	Captopril	28 (11.3)
3	Levofloxacin	18 (7.3)

Results

Improper drug selection

- I.V. Proton pump inhibitors → should be oral
- Ranitidin used for delirium patient
- Gatifloxacin for DM patient
- Ondansetron for mild nausea

Results

Drug interactions

- Allopurinol X Captopril
- Captopril X Spironolacton
- Captopril X Potassium
- Spironolacton X Potassium
- Digoxin X Furosemide
- Aspirin X Warfarin

Results

Failure to receive drug

- Economy reason
- Availability of drugs

Results

Overdosage

- No dosage adjustment for patients with renal impairment
- Sinergistic effect of two drugs
- Nurse gave a usual dose rather than the reduced dose as prescribed

Results

Drug use without indication

- Antibiotics given without clear diagnosis of infection
- Piracetam use
- Ondansetron use

Results

Adverse drug reaction

- GI ulceration due to NSAIDs
- Hyperkalemia due to Captopril
- Bradycardia due to Propranolol
- Hematoma due to warfarin
- Falls due to Diazepam

Results

Untreated indication

- Aspirin for CHD
- TB
- Uncontrolled DM type 2
- Gastroparesis

Results

Subtherapeutic dose

- Daily dose of captopril
- Griseofulvin for *Tinea sp* infection
(only 1 week instead of 2 weeks)

Conclusions

- High percentage of hospitalized elderly patients having DRPs
- Improper drug selection was the most frequently DRP
- Proton pump inhibitors was the most frequent drugs contributed to DRPs
- Health care professionals treating elderly patients should alert such DRPs to optimize drug therapy



Thank you