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DRUG RELATED PROBLEMS AMONG AMBULATORY PATIENTS DIAGNOSED WITH ARTERIAL HYPERTENSION

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BACKGROUND

Hypertension is one of the most common diseases. However despite wide variety of effective antihypertensive drugs most of the patients in Poland fail to achieve recommended blood pressure treatment targets.



AIM OF STUDY

The aim of the study was quantitative and qualitative analysis of drug related problems (DRPs) among ambulatory patients diagnosed with arterial hypertension.



METHODS

The interviews with patients were conducted by the senior year pharmacy students during their internship in community pharmacy.

Data including pharmacotherapy, health state, self-monitoring and complaints was analyzed by the researcher to identify DRPs. PCNE classification version 5.01 was used. Data was analyzed retrospectively.

RESULTS

Characteristics of the patients

number of patients	222
age, mean [years] \pm SD, min-max)*	65.5 \pm 12.7, 22 - 89
BMI (mean \pm SD, min-max)**	28.7 \pm 4.2, 17.3 - 44.6
the correct SBP and DBP (number of patients, %)***	77, 36.5%

* data for 218 patients

** data for 220 patients

*** data for 211 patients

RESULTS

Quantitative characteristic of medication use

	N	mean, per patient	minimum, per patient	maximum, per patient	median
chronic use	1183	5.34	1	15	3
ad hoc use	829	3.73	0	13	2
total	2012	9.06	3	22	8

* data for 218 patients

** data for 220 patients

RESULTS

Number of DRPs in correlation to number of medication used

medications used per patient (n)	patients (n)	total	DRP		
			mean, per patient	minimum	maximum
3-5	34	103	3.03	0	6
6-10	115	537	4.67	0	16
11-15	53	401	7.57	0	21
16-22	20	186	9.30	3	20
total	222	1227	5.53	5	21

RESULTS

Classification of detected DRPs

primary domain	problems	n (N=1227)	total %	primary domain %
P1 Adverse reactions	P1.1 Side effect suffered (non-allergic)	256	20.9	99.2
	P1.2 Side effect suffered (allergic)	2	0.2	0.8
P2 Drug choice problem	P 2.3 Inappropriate drug form (not must appropriate for indication)	21	1.7	28.0
	P2.4 Contra-indication for drug	37	3.0	49.3
	P2.6 No drug prescribed but clear indication.	17	1.4	22.7
P3 Dosing problem	P3.1 Drug dose too low or dosage regime not frequent enough	89	7.3	80.2
	P3.2 Drug dose too high or doseage regime not too frequent	21	1.7	18.9
	P3.4 Drration of treatment too long.	1	0.1	0.9
P5 Interactions	P5.1 Potential interaction	607	49.5	99.2
	P5.2 Manifest interaction	5	0.4	0.8
P6 Others	P6.1 Patient dissatisfied with therapy despite taking drug(s) correctly.	2	0.2	0.2
	P6.4 Therapy failure (reason unknown)	169	13.8	13.8

RESULTS

Classification of detected causes of DRP

primary domain	causes	n (N=1738)	total %	primary domain %
C1 Drug/Dose Selection	C1.1 Inappropriate drug selection	840	48.3	73.8
	C1.2 Inappropriate dosage selection	263	15.1	23.1
	C1.3 More cost-effective drug available	2	0.1	0.2
	C1.5 Synergistic/preventive drug required and not given	33	1.9	2.9
C2 Drug Use Process	C2.1 Inappropriate timing of administration and/or dosing intervals	19	1.1	3.2
	C2.2 Drug underused/ under-administered	84	4.8	14.1
	C2.3 Drug overused/ over-administered	23	1.3	3.8
	C2.4 Therapeutic drug level not monitored	471	27.1	78.8
	C2.5 Drug abused (unregulated overuse)	1	0.1	0.2
C4 Patient/Psychological	C4.2 Patient has concerns with drugs	1	0.1	50.0
	C4.3 Patient suspects side-effect	1	0.1	50.0

RESULTS

Symptoms of side effects

Side effect detected:

P1.1 - 256

P1.2 - 2

Symptoms:

286

symptoms	total symptoms n= 286	total symptoms %
gastrointestinal system	54	18.88
circulatory system	45	15.73
respiratory system	43	15.03
other pain	28	9.79
the nervous system	28	9.79
headache	17	5.94
dizziness	16	5.59
weakness. weariness	15	5.24
skin problems	12	4.20
laboratory results	10	3.50
musculoskeletal system	7	2.45
body weight		
problems with hearing	2	0.70
urinary system		
other		
vision problems and eye		
immunity	1	0.35
reproductive system		



CONCLUSIONS

- polypharmacy and DRPs are common among hypertensive patients.
- the increase in the number of drugs preparations used may contribute to an increase in DRPs.
- the retrospective analysis do not let to identify all type of DRPs – in a prospective analysis the number of DRPs could be higher .
- it is necessary to involve community pharmacists in monitoring of patients' pharmacotherapy to identify and resolve pharmacotherapy issues.



Thank you for your attention.

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