

IMPROVING THE SAFETY OF PHARMACOTHERAPY IN PAEDIATRIC HAEMATO-ONCOLOGY BY CLINICAL PHARMACY SERVICES

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BACKGROUND AND IMPORTANCE

- Prevention of drug related problems (DRP) beneficially affects patient outcomes.
- Children who are treated for haemato-oncological diseases or receiving a haematopoietic stem cell transplantation (HSCT) are highly susceptible to DRP.
- Paediatric clinical pharmacy services (CPS) showed a positive impact on several outcome measures, including reduction of DRP. [1]

AIM AND OBJECTIVES

To assess the impact of CPS in a paediatric tertiary care centre specialized in haemato-oncology by

- quantifying DRP and pharmaceutical interventions (PI)
- determining their acceptance rate, rating their clinical significance and estimating economic benefit.

MATERIALS AND METHODS

Where, when?

- St. Anna Children's Hospital, Department of Paediatrics, Medical University of Vienna
- A: Haemato-oncology, 11 beds
B: HSCT unit, 10 beds
- June - December 2020

What, how?

- One clinical pharmacist (CP)
- Provision of CPS
 - medication reviews
 - ward round participations
 - specific drug information

OUTCOMES

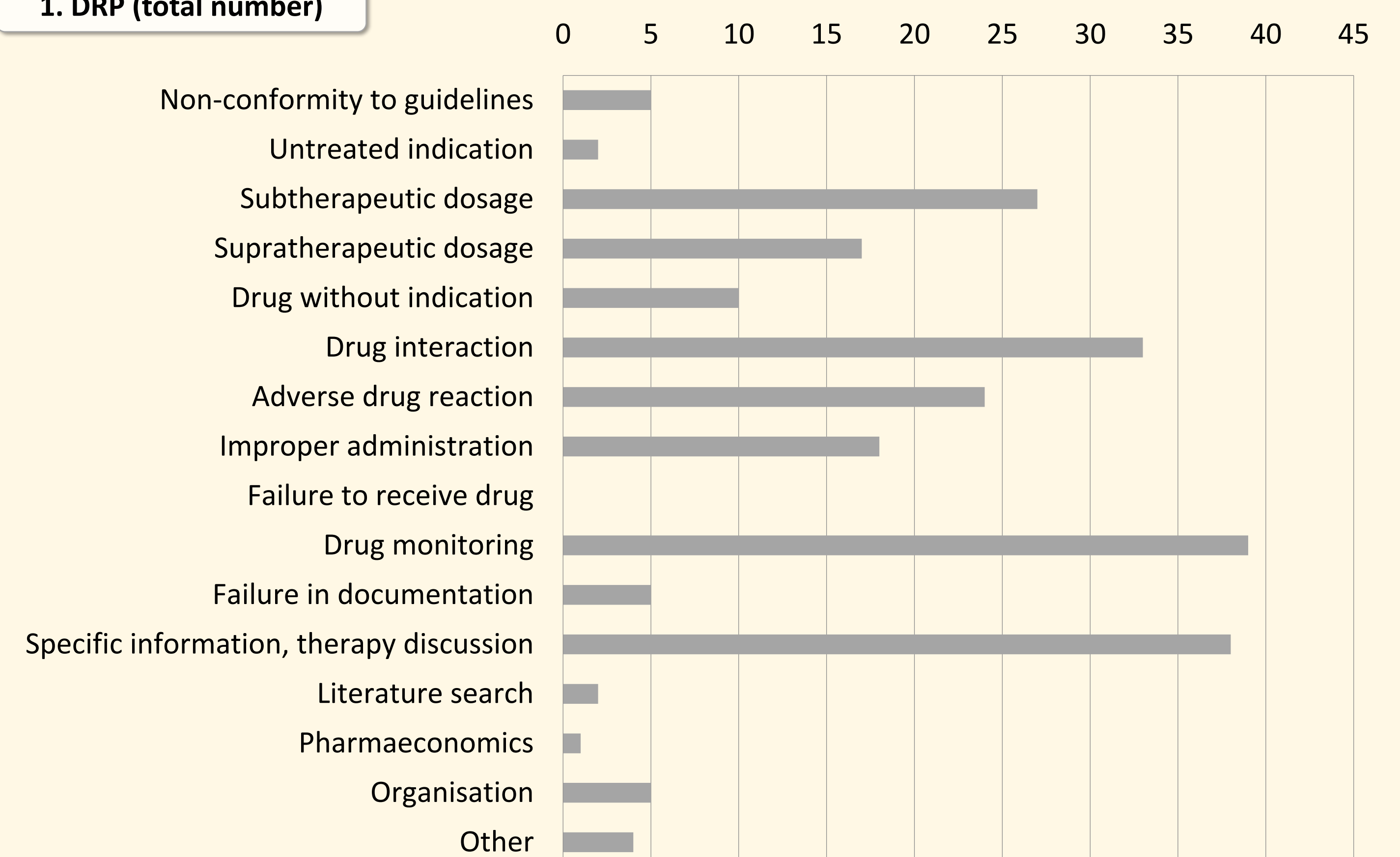
- Documentation of DRP, PI and Follow-Up
- Assessment of PI for clinical significance by the CP and experts (2 haemato-oncologists, 2 clinical pharmacists) [2]
- Estimation of economic benefit: drug therapy cost reductions and avoided follow-up costs i.e. prevention and management of adverse drug reactions [3]

RESULTS

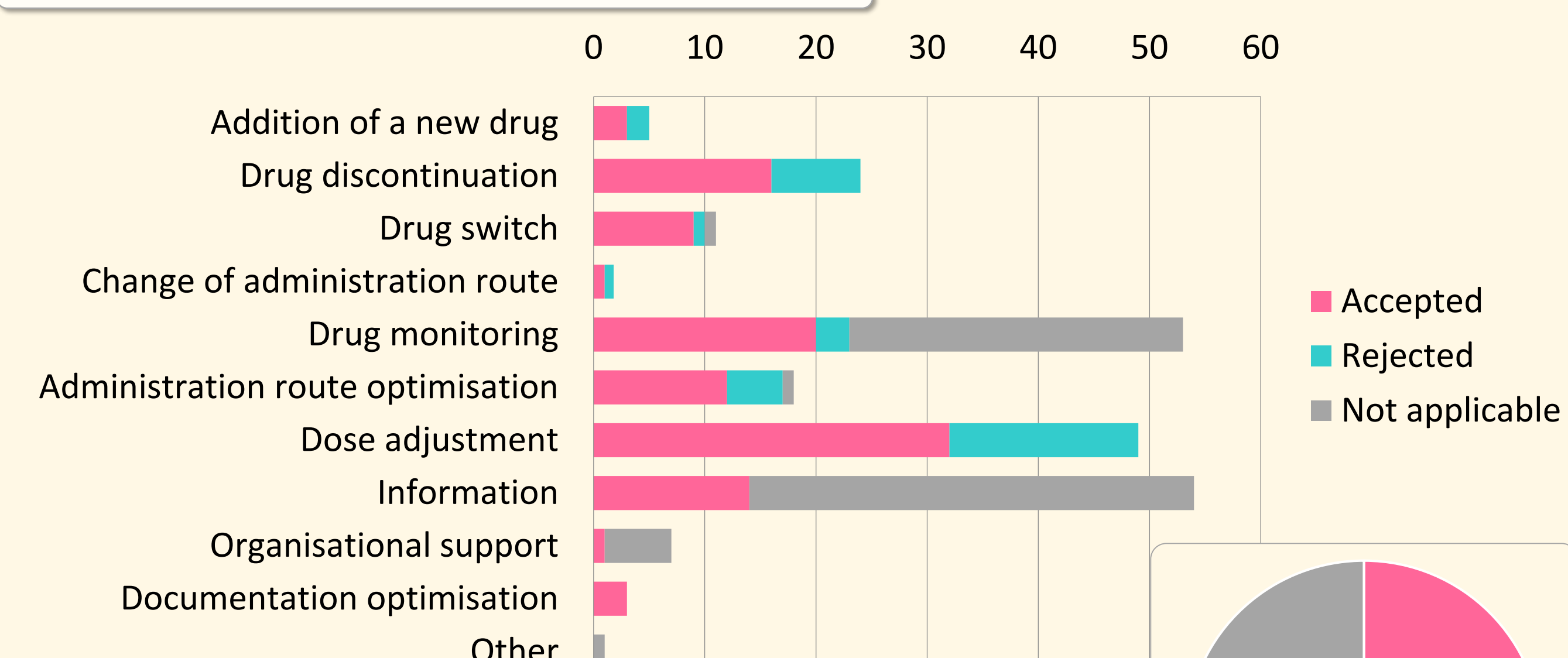
- During **32** ward rounds **230** DRP were addressed by PI in **36** patients.
- \bar{x} **8,6** \pm 3,5 Interventions/ward round
- \bar{x} **1,8** \pm 1,2 Interventions/patient and ward round

PATIENTS			
Patients (n)	Median age (years)	Indications	
36	7 (0.4-17)	haemato-oncological diseases, HSCT	
PHARMACEUTICAL INTERVENTIONS (PI)			
n	Acceptance rate %	Significant % (by CP)	Significant % (by experts)
230	73.5	66	69
ECONOMIC BENEFIT			
Costs of CPS provision (€)			7,200
Reduced follow-up costs (€) by prevention of 11 adverse drug reactions			14,300 – 27,500
Reduced follow-up costs (€) by identification of 24 adverse drug reactions			31,200
Savings (€)			38,300 – 51,500

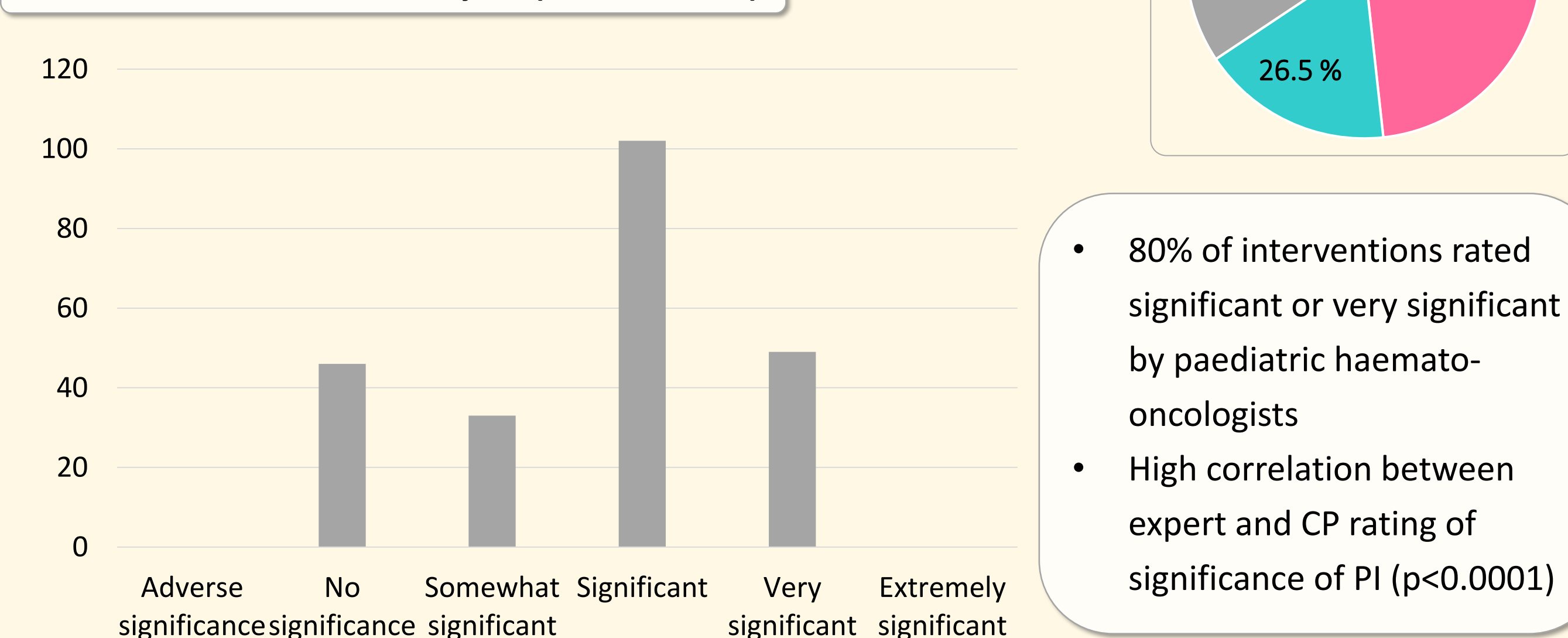
1. DRP (total number)



2. PHARMACEUTICAL INTERVENTIONS (total number)



3. CLINICAL SIGNIFICANCE by CP (total number)



CONCLUSION

- This evaluation showed that CPS in a tertiary care centre specialized in paediatric haemato-oncology are capable to identify and prevent DRP by clinically significant PI.
- The estimated economic benefit of CPS was at least 6-fold higher than their costs. Based on the results, CPS were expanded in our hospital.

References

- [1] Drovandi A et al., A systematic review of clinical pharmacist interventions in paediatric hospital patients. Eur J Pediatr. 2018 Aug;177(8):1139-1148.
- [2] Hatoum HT et al., Physicians' review of significant interventions by clinical pharmacists in inpatient care. Drug Intell Clin Pharm. 1988 Dec;22(12):980-2.
- [3] Zuba Martin AK (2016) Evaluation Pilotprojekte „Polypharmazie“. Gesundheit Österreich, Wien