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Assessment of oral drug therapy regarding absorption disorders in patients with intestinal ostomies

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An observational study

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Background

An insufficient absorption of orally administered drugs may threaten therapy goals.

Thus, gastrointestinal alterations associated with ostomy formations may pave the way towards absorption disorders.

Although there had been reports before, this topic remains insufficiently studied.

Aim and Objectives

The main purpose of this study was to assess oral medication in patients who had newly undergone ileostomy or colostomy formation. In order to observe whether surgery led to the presence of any drug residuals in the pouches, ineffectiveness of therapy or any other indications of absorption disturbances.

Methods

An observational study was conducted over 18 months in 2022/23 at the division of visceral surgery at the Barmherzige Brüder Hospital in Graz.

50 patients aged 18 - 80 years, were enrolled. Oral drug therapy of each patient was assessed following ostomy surgery.

Before hospital discharge, an interview was led with the patients to collect additional data regarding clinical status. At earliest, 2- 8 weeks after discharge, the patients were interviewed for the second time at the ostomy outpatient clinic or by telephone call.

Both interviews were led by 2 pharmacists based on standardized questionnaires.

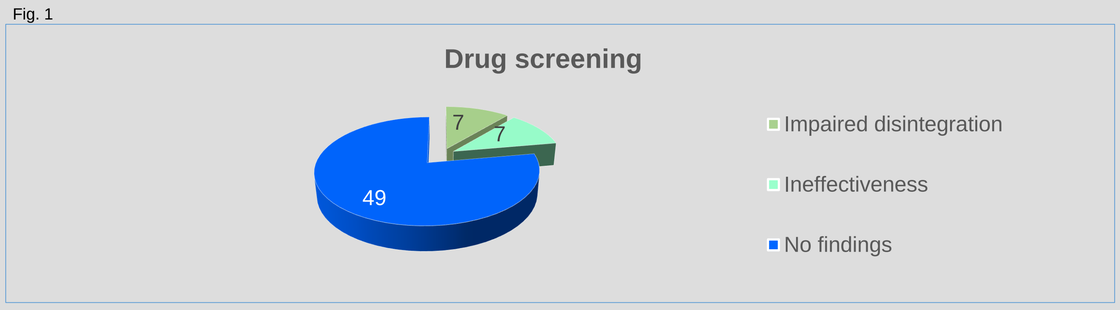
Results

Out of 224 drugs, 63 different agents were administered (1 agent remained with an unknown t_{max}). 5 patients were presented featuring indigested drug residuals of 7 different agents in their ostomy pouch (Fig. 1). In addition, another 7 different agents showed a decrease in effectiveness, measured by clinical status and laboratory parameters (Fig. 1 and Tab. 1)
Table 2 presents a drug monitoring carried out to proof the impaired absorption of Bupropion.

Tab. 1

Findings	tmax [h] (total number of applied drugs)		
	0,5-3 (36)	3-5 (16)	>5 (10)
Impaired disintegration or dissolution	Capecitabine Carvedilole Esomeprazole	Acetylicsalicylic-acid Aprepitant Bupropion	Pramipexole
Ineffectiveness based on clinical symptoms and/or laboratory parameters	Ondansetron Trazodon Triazolam	Amlodipine Levothyroxine Loperamide Tamsulosin	

Fig. 1



Tab. 2

	Value [ng/ml]	Therapeutic range of plasma levels [ng/ml]
Bupropion + Hydroxybupropion	353.0 ng/ml	850-1500 [ng/ml]
Bupropion	16.0 ng/ml	
Hydroxybupropion	337.0 ng/ml	

Conclusion

The results of this study confirm that contrary to the assumptions, absorption disorders might also occur in drug therapy which seems to be absorbed rapidly. Therefore, no absolute statements regarding intestinal absorptive capacity can be done. Oral drug-therapy of every patient has to be assessed individually based on intestinal condition and applied drug properties.

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