


1

Pharmacokinetic profile of oral desogestrel before and after Roux-en-Y gastric bypass surgery (RYGB)

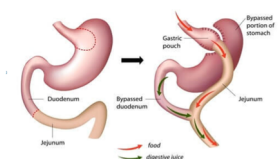

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2

- Bariatric surgery: well documented and efficient treatment for morbid obesity BMI>35 kg/m²
- Roux-en-Y gastric bypass (RYGB) is still a common technique
- Women are advised not to become pregnant 12-18 months postoperative (ACOG 2009)
- Does the procedure affect the absorption of oral contraceptives?

3

Method


- Single centre, pharmacokinetic study
- 18-45 years old women accepted for RYGB
- Using desogestrel 75 µg (Cerazette®)
- 24 h blood sampling:

8±6 weeks
preop

12±2 weeks
postop

52±2 weeks
postop


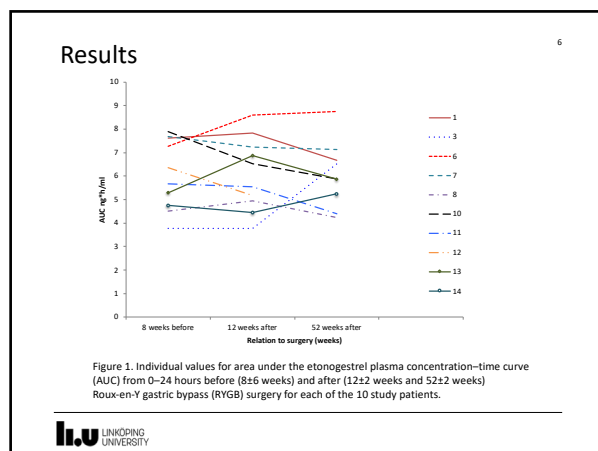
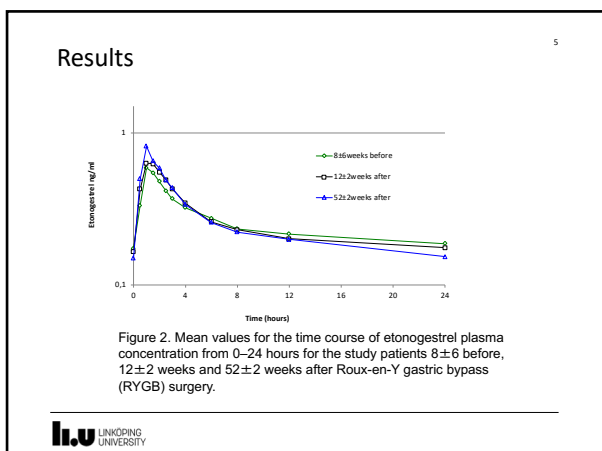
- P-etonogestrel measured with UPLC/MS-MS
- Calculation of pharmacokinetic parameters
- AUC- a measure of total etonogestrel exposure



4

Table 1. Demographic and clinical characteristics and pharmacokinetic parameters of etonogestrel in nine patients before and at two occasions after RYGB.

	8±6 weeks before RYGB _(n=9)	12±2 weeks after RYGB _(n=9)	52±2 weeks after RYGB _(n=9)	p-value
Age (years)				
Median (range)	35 (22-41)			
BMI (kg/m²)				
Mean ± SD	40.5 ± 4.4	34.2 ± 4.8	29.0 ± 4.8	<0,0001*
Min-max	34.8-50.6	29.3-46	24.5-40.7	
Weight (kg)				
Mean ± SD	111.3 ± 15.5	93.8 ± 15.5	78.9 ± 14.9	<0,0001*
Min-Max	97.7-144.5	81.1-131.3	60.3-114.7	
AUC_{0-24h} (ng•h/ml)				
Mean ± SD	6,097 ± 1,49	6,119 ± 1,56	6,096 ± 1,41	ns
Min-max	3,776-7,895	3,772-8,589	4,237-8,755	
C_{max} (ng/ml)				
Mean ± SD	0.590 ± 0.236	0.633 ± 0.113	0.817 ± 0.163	0.024**
Min-max	0.394-1.137	0.486-0.837	0.513-1.064	
T_{max} (h)				
Median	1.5	1	1	ns
Range	1-4	1-2	1-1.5	
t_{1/2} (hours)				
Mean ± SD	29.2 ± 5.4	25.8 ± 9.4	23.0 ± 8.1	ns
Cl_{renal} (L/h)				
Mean ± SD	13.1 ± 3.5	13.1 ± 3.5	12.9 ± 2.9	ns
SHBG (ng/ml)				
Mean ± SD	28.17 ± 12.82	55.80 ± 20.94	76.62 ± 24.79	<0,0001*

Conclusion

7

- No clinically significant pharmacokinetic differences!
- Suggests that oral desogestrel may be used after RYGB
- Small study, needs to be confirmed in larger studies

Questions?

8

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