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Effects of Livact granule on liver function recovery after donor right hemi-hepatectomy

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Introduction

- **Liver transplantation (LT):**
  - Major treatment modality for:
    end-stage liver disease
    hepatocellular carcinoma
    acute hepatic failure
  - Recent innovations in surgical and postoperative treatment
    → better LT outcomes → LT↑

- **The safety of donor is the most important issue in LDLT**
  - Healthy liver from a healthy living donor
  - Liver resection is a complex surgery
    → associated with certain risks to the donor, including
    bleeding, infection, bile leakage, and liver failure
  - **The safety of the donor is a critical component of LDLT**

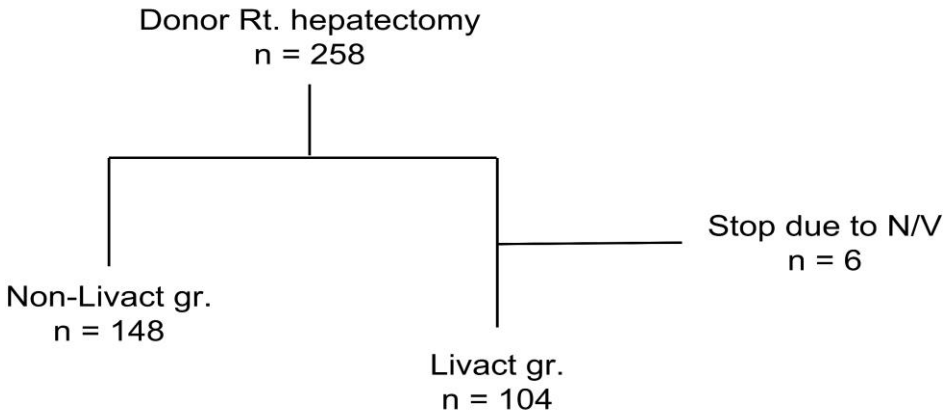
Introduction

- **Branched-chain amino acids (BCAAs)**
  - leucine, isoleucine, and valine
  - essential amino acids that play a crucial role in protein synthesis and muscle building.
- **Branched-chain amino acids (BCAAs) may play a role in the recovery process after liver resection**
  - BCAAs (leucine, isoleucine, and valine): essential amino acids that play a crucial role in protein synthesis and muscle building.
  - reduce inflammation and oxidative stress
  - increase serum albumin concentration
  - reduce muscle breakdown
  - improves perioperative insulin resistance
- **Livact granule** (Samil Pharmaceutical Co., Ltd.): L-Isoleucine (952mg/pack), L-Leucine (1904mg/pak), L-Valine (1144mg/pack)

→ This study is performed to evaluate effect of Livact granule for donor safety and recovery.

Patients and methods

- From January 2016 to December 2021
- A total of 258 patients was performed donor right hepatecto
- Non-Livact group: 148
  Livact group: 104 (Six of 110 patients stopped taking Livact due to nausea and vomiting)
- Pleural effusion: pleural tapping during hospitalization due to symptoms or large amounts
- Prolonged ascites: drainage volume is more than 100mL/day at discharge



Results

Table 1. Clinical Characteristics According to Livact group

	Non-Livact gr.	Livact gr.	*p*
Age	35.8 ± 12.08	40.0 ± 13.44	0.01
Sex (male)	92 (62.2%)	61 (58.7%)	0.58
DM	2 (1.4%)	3 (2.9%)	0.39
HBP	4 (2.7%)	10 (9.6%)	0.02
BMI	24.8 ± 4.06	24.5 ± 3.77	0.85
Steatosis	3.8 ± 4.98	4.3 ± 4.98	0.45
AST	22.3 ± 9.81	22.2 ± 7.48	0.91
ALT	22.0 ± 14.27	21.9 ± 12.33	0.94
Total bilirubin	0.6 ± 0.26	0.7 ± 0.30	0.08
Albumin	4.4 ± 0.31	4.4 ± 0.79	0.51
PT (INR)	1.02 ± 0.06	1.01 ± 0.06	0.12
FLR (future liver remnant, %)	36.6 ± 4.34	35.6 ± 5.07	0.11

Results

Table 2. Operative Factors

	Non-Livact gr.	Livact gr.	*p*
MIS (minimal invasive surgery)	80 (54.1%)	49 (47.1%)	0.28
PV variation	15 (10.1%)	16 (15.4%)	0.21
BD variation	42 (28.4%)	36 (34.6%)	0.29
PRC transfusion	4 (2.7%)	1 (1.0%)	0.33
Op. time	223.4 ± 49.10	246.9 ± 47.27	<0.01

Results

Table 3. Postoperative outcome

	Non-Livact gr.	Livact gr.	*p*
POD 5days,	80 (54.1%)	49 (47.1%)	0.28
AST	15 (10.1%)	16 (15.4%)	0.21
ALT	42 (28.4%)	36 (34.6%)	0.29
Total bilirubin	4 (2.7%)	1 (1.0%)	0.33
Albumin	3.2± 0.32	3.3 ± 0.55	0.05
PT (INR)	1.28± 0.28	1.23 ± 0.22	0.05
Normalization of T. bil (days)	5.3± 2.57	5.5 ± 2.45	0.44
Normalization of PT (days)	8.4± 5.02	5.9 ± 2.88	<0.01
Pleural effusion	4 (2.7%)	0	0.09
Prolonged ascites	21 (14.2%)	0	<0.01
Wound complication (seroma)	3 (2.0%)	1 (1.0%)	0.19
Hospital stays (day)	11.5± 3.81	10.7 ± 3.32	0.07

Conclusions

- There were no side effects other than nausea and vomiting while taking Livact granules.
- Six patients (5%) discontinued Livact granule due to nausea and vomiting.
- In donor right hepatectomy patients, taking Livact granules, BCAAs, helps donor recovery. For donor safety, administration of Livact granules during the perioperative period may be considered.

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Thank you for your attention