# Outcome of Bariatric Surgery in Chinese Patients with Liver Cirrhosis

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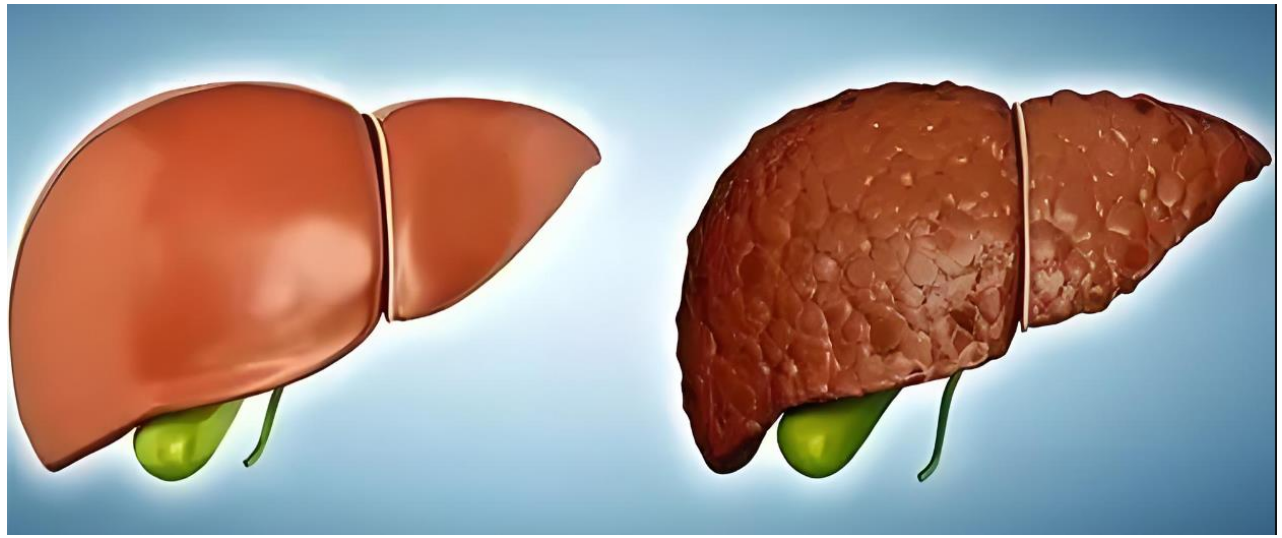
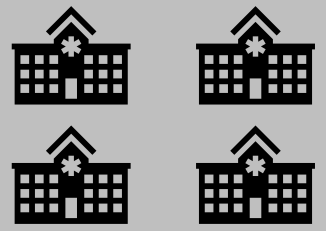
Cirrhosis is a complex disease that may result in higher morbidity and mortality after abdominal surgery.

The prevalence of MAFLD (*metabolic dysfunction-associated fatty liver disease*) is 60-80% among patients with obesity. It can rapidly progress to steatohepatitis with liver fibrosis and cirrhosis.

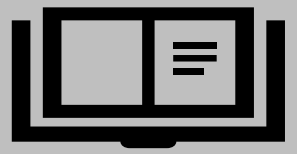


The purpose of our study was to describe the outcome of Chinese bariatric surgery patients with cirrhosis.

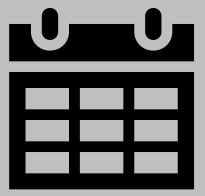
# Study design



4 centers from China



Retrospective study (n=47)



Jan 2016 – Dec 2023
n=9492

Follow-up: 6, 12 months

# Inclusion criteria

I. Patients Age: 18 – 65 years

II. BMI: simple obesity ≥ 32 kg/$m^2$

or BMI ≥ 27 kg/$m^2$ and ≥ 1 comorbidity

III. History of Liver cirrhosis

IV. Unexpected diagnosis of Liver Cirrhosis during surgery

# RESULTS

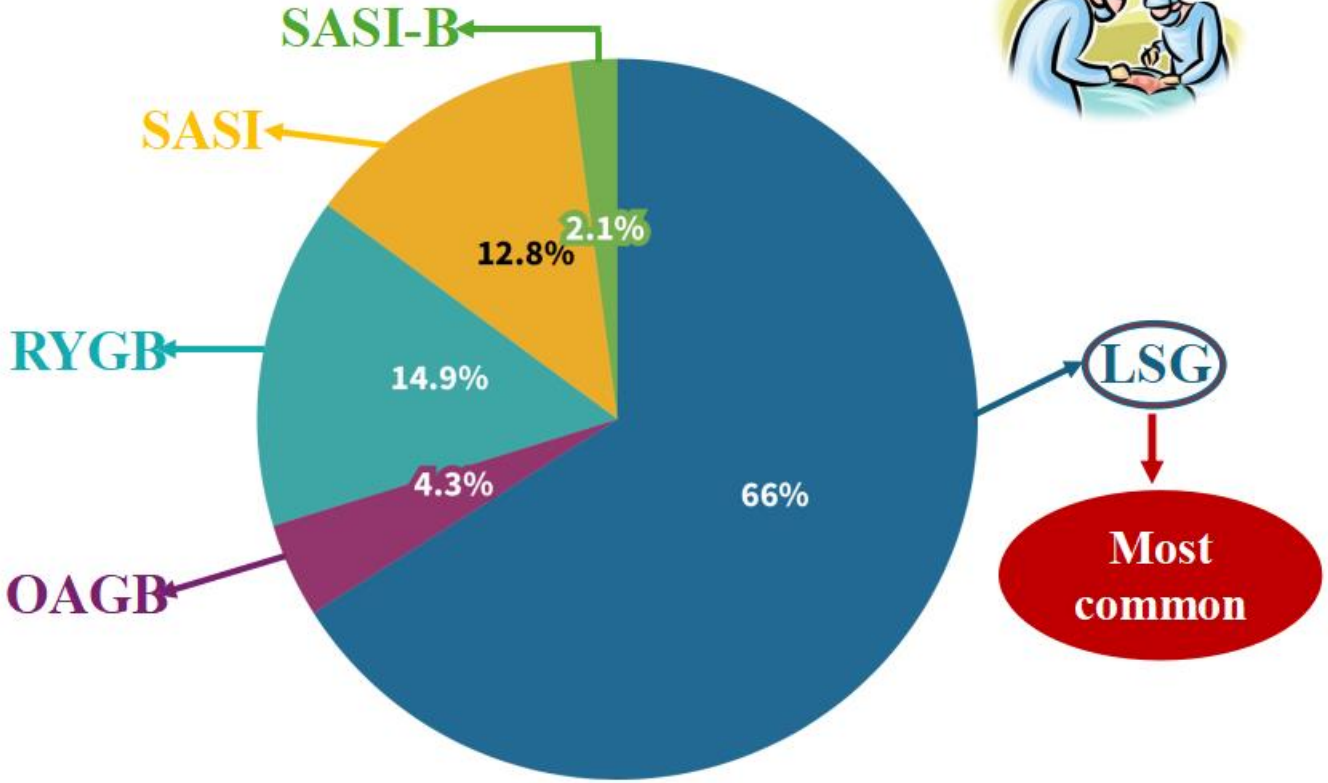
# Baseline characteristics

| Baseline characteristics (n = 47) | |
|---|---|
| Age | 38.83±11.86 |
| Gender (Male/Female) | 28/19 |
| Body weight (kg) | 118.96±19.08 |
| BMI (kg/m$^2$) | 41.12±5.20 |
| Type 2 diabetes | 26 (55.32%) |
| hypertension | 18 (38.30%) |
| Dyslipidemia | 20 (42.55%) |
| Obstructive sleep apnea | 23 (48.94%) |

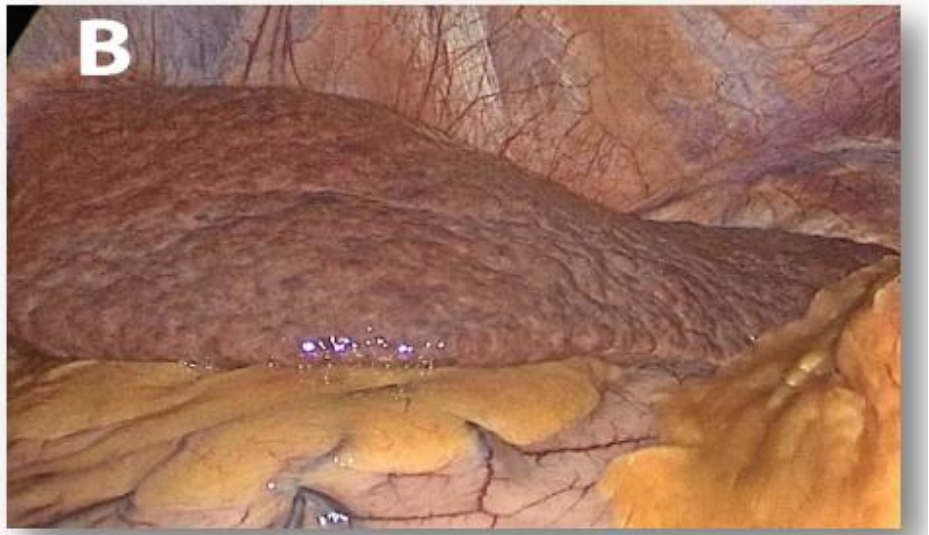
# Baseline characteristics

| Child-Pugh classification (n = 47) | |
|---|---|
| **Child-Pugh classification** | |
| **Class A** | **46 (97.87%)** |
| **Class B** | **1 (2.13%)** |
| **Class C** | **0 (0.00%)** |

# Surgical procedures



# Visual assessment of the liver

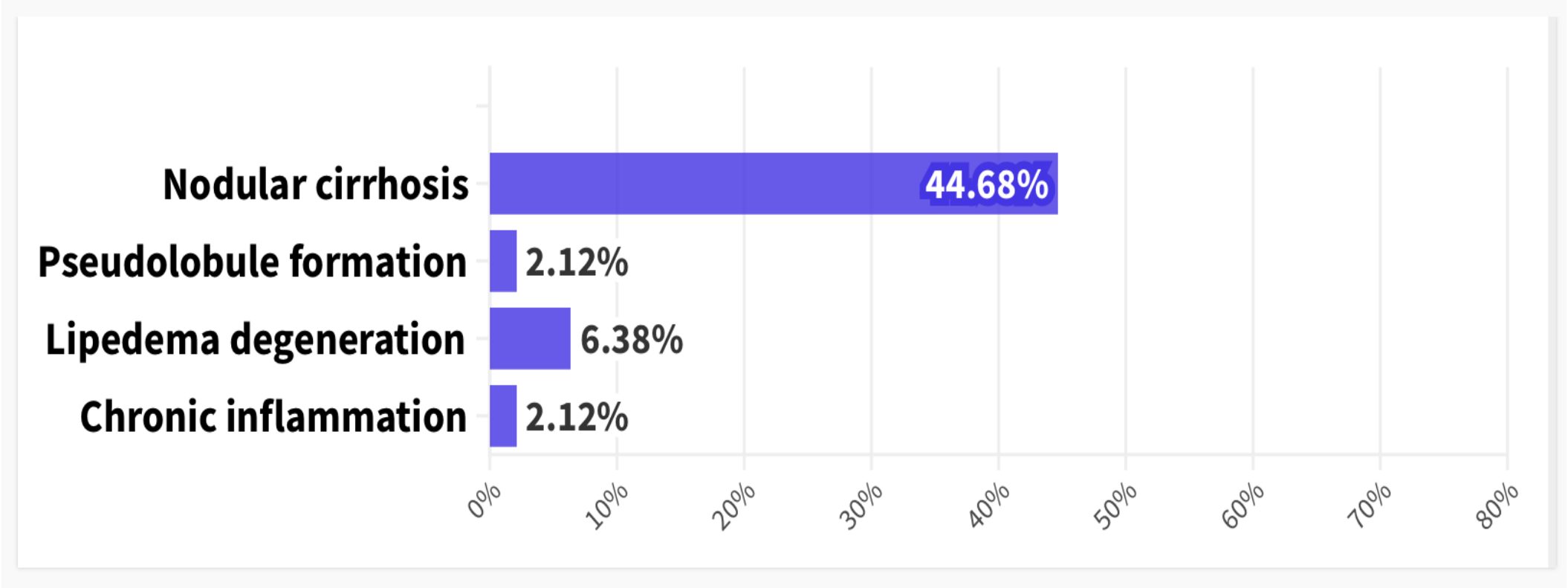




History of cirrhosis preoperatively

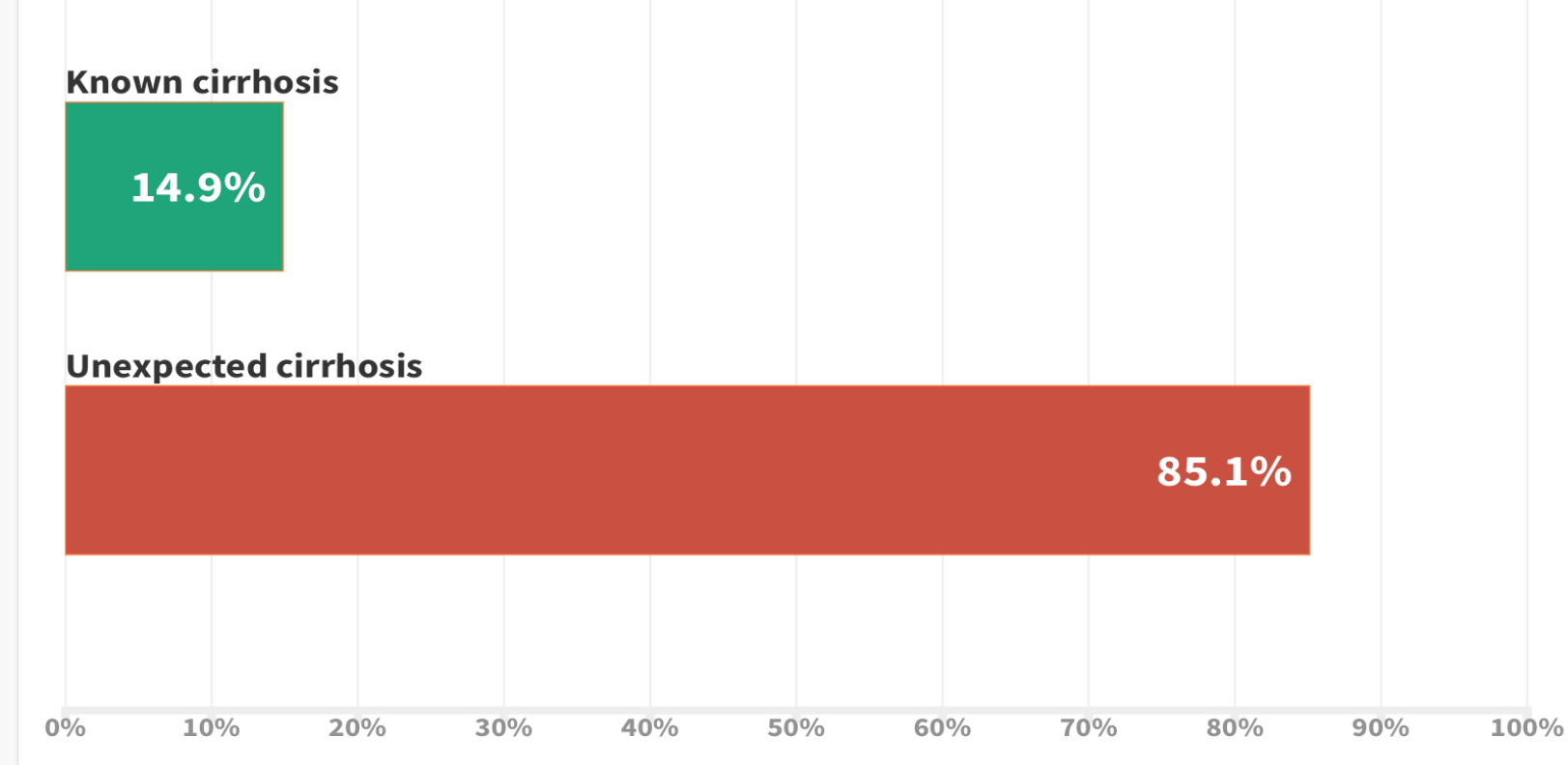
Relatively similar

Suspected cirrhosis during surgery

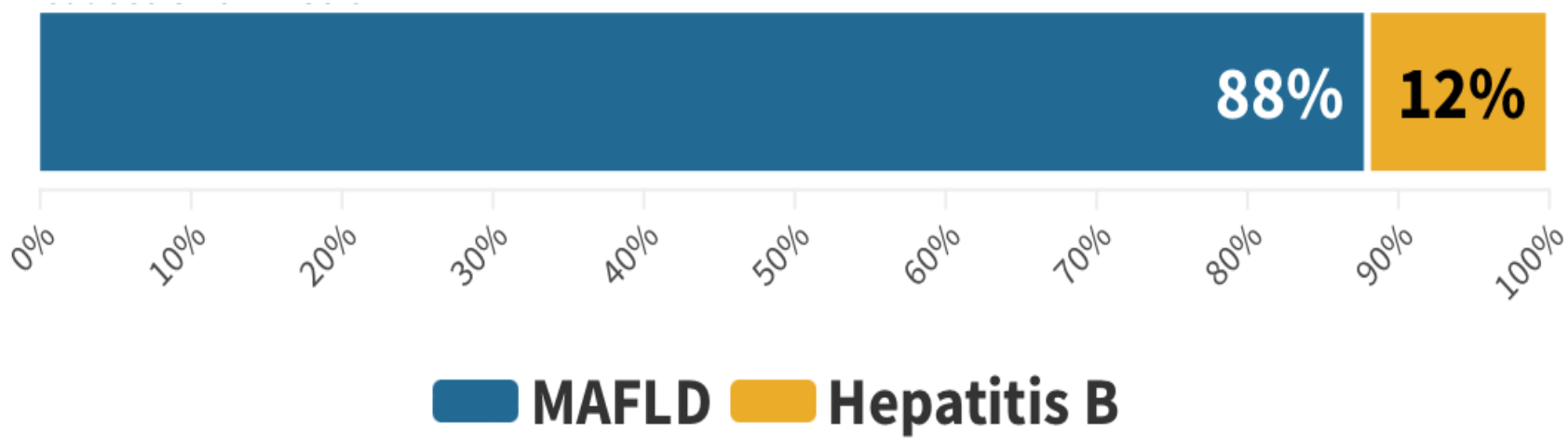
# Pathological results



# Occurrence of cirrhosis (n=47)



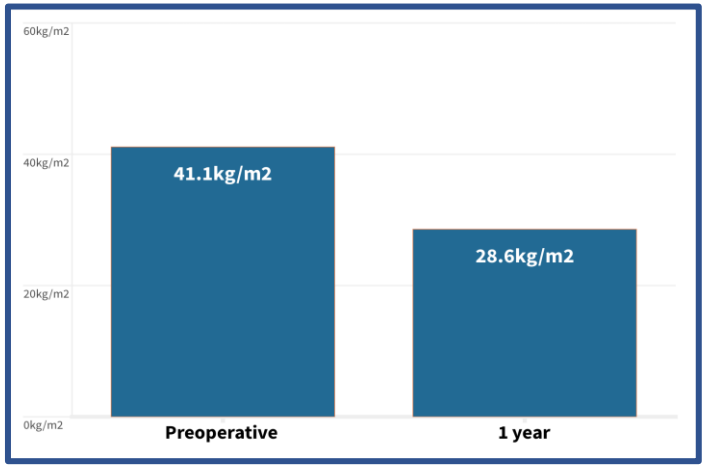
# Causes of liver cirrhosis



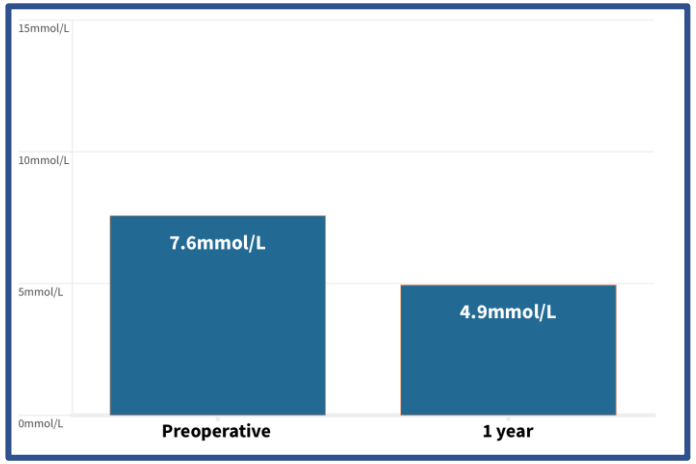
# Blood chemistry status

| | Baseline | 12 months | P-value |
|---|---|---|---|
| **AST (U/L)** | **46.21±32.84** | **24.23±14.60** | **0.0052*** |
| **ALT (U/L)** | **60.11±46.25** | **28.21±17.31** | **0.0036*** |
| Total bilirubin (umol/L) | 15.75±7.64 | 19.59±10.84 | 0.1619 |
| ALB (g/L) | 41.97±3.23 | 41.84±4.26 | 0.1717 |
| Prothrombin time | 12.00±2.14 | 11.16±0.44 | 0.3628 |
| INR | 0.98±0.12 | 1.00±0.13 | 0.7324 |
| Hb (g/L) | 145.09±15.90 | 137.69±13.93 | 0.0852 |
| Platelets (mmol/L) | 216.76±69.94 | 198.80±46.82 | 0.3226 |
| **Triglycerides (mmol/L)** | **1.88±1.31** | **1.05±0.44** | **0.0070*** |
| Cholesterol | 4.79±1.02 | 4.42±1.09 | 0.2010 |
| **HDL (mmol/L)** | **1.01±0.24** | **1.27±0.23** | **0.0002*** |

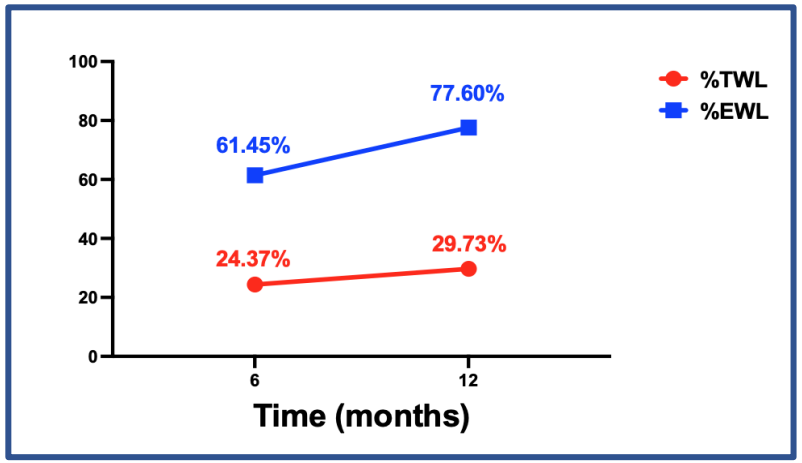
## BMI changes



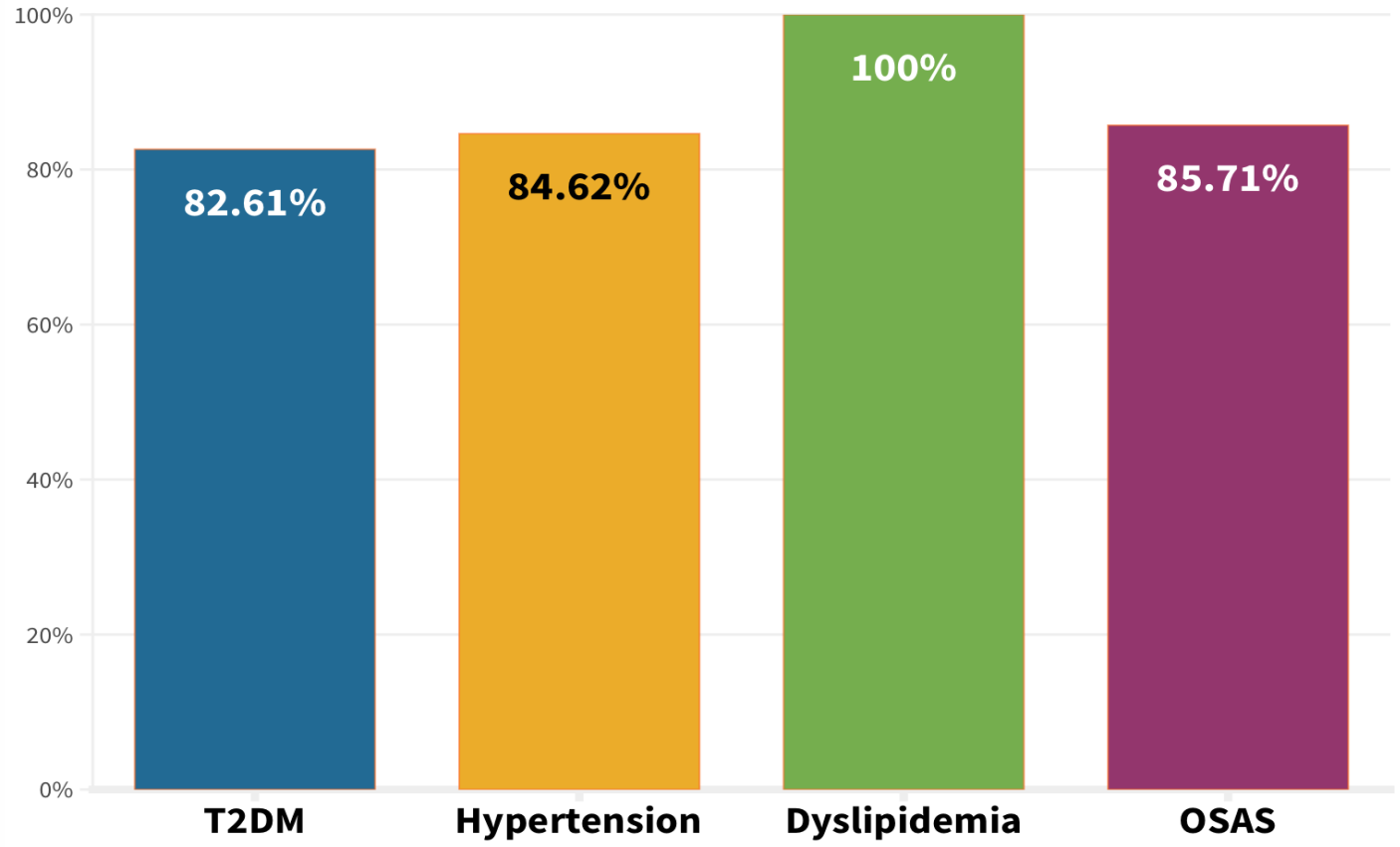

## Fasting blood glucose changes




## %TWL,%EWL (6-12 mos)



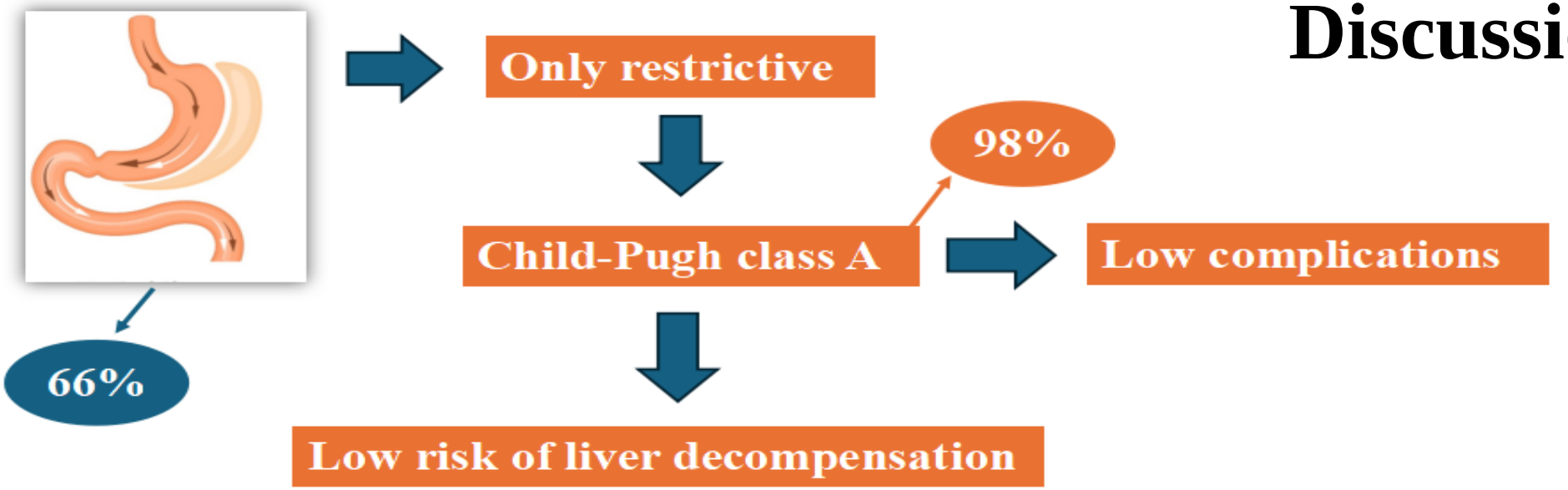
# Comorbidity remissions (1 year)



# 30-day complications

| Complications | Rate (%) |
|---|---|
| Portal vein thrombosis | 1 (2.12%) patient |
| Gastrointestinal bleeding | 1 (2.12%) patient |
| Abdominal infection | 1 (2.12%) patient |
| Overall Readmission | 3 (6.38%) Patients |

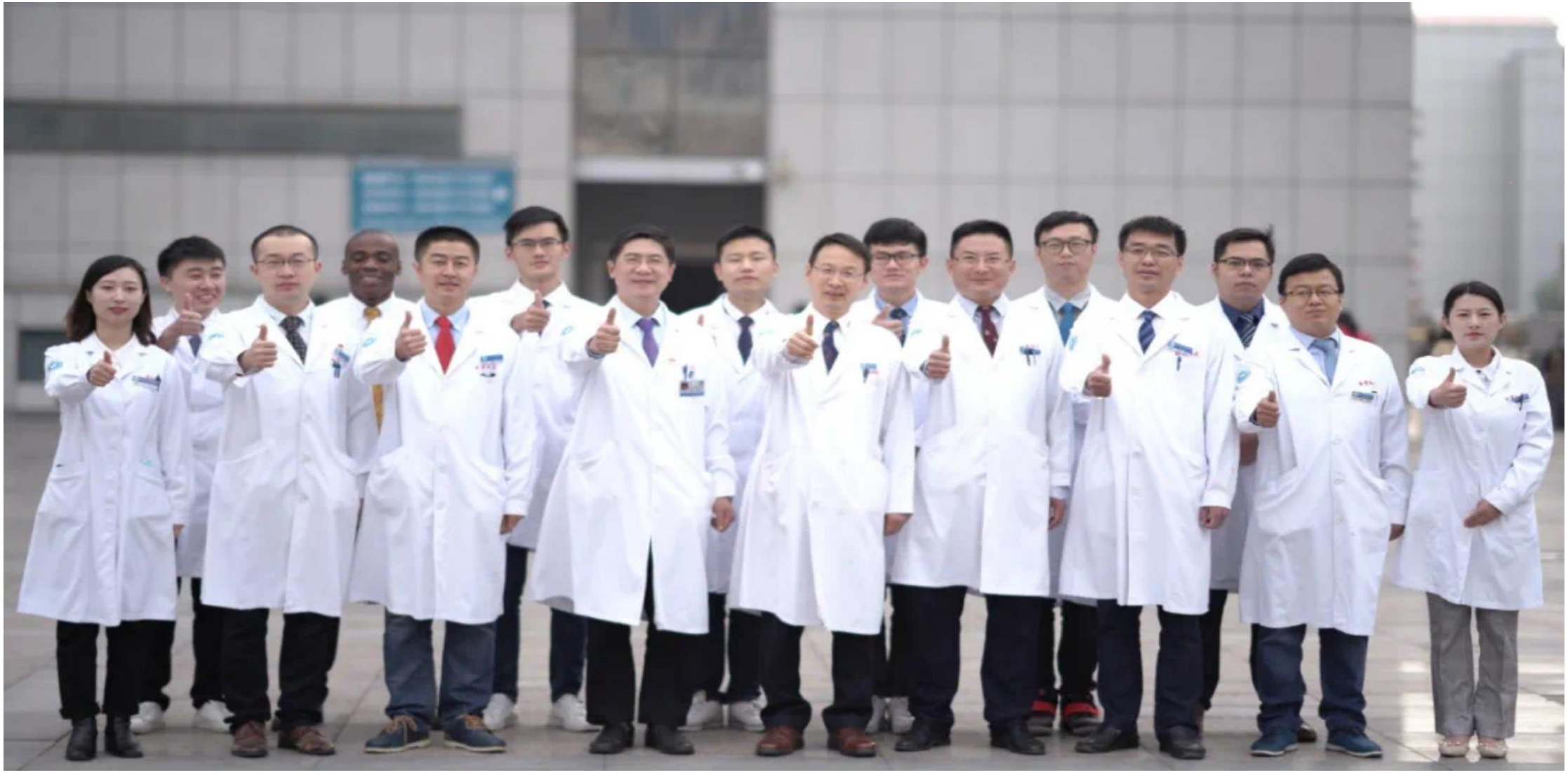
# Discussion




- Due to a small number of malabsorptive surgery cases (e.g. RYGB, SASI,..), the outcome of these procedures could not to be compared. Caution is required when selecting malabsorptive procedures in patients with cirrhosis.

# Summary

- **Bariatric surgery can be performed in patients with unexpected liver cirrhosis with low complications and no mortality.**
- **No liver decompensation was found one year after surgery.**
- **LSG appears to be safe in patients with liver cirrhosis.**
- **Further studies with larger samples and longer follow-ups would be needed.**



# THANK YOU !