# The Incidence and Risk Factors of Anemia after LSG in Chinese Population

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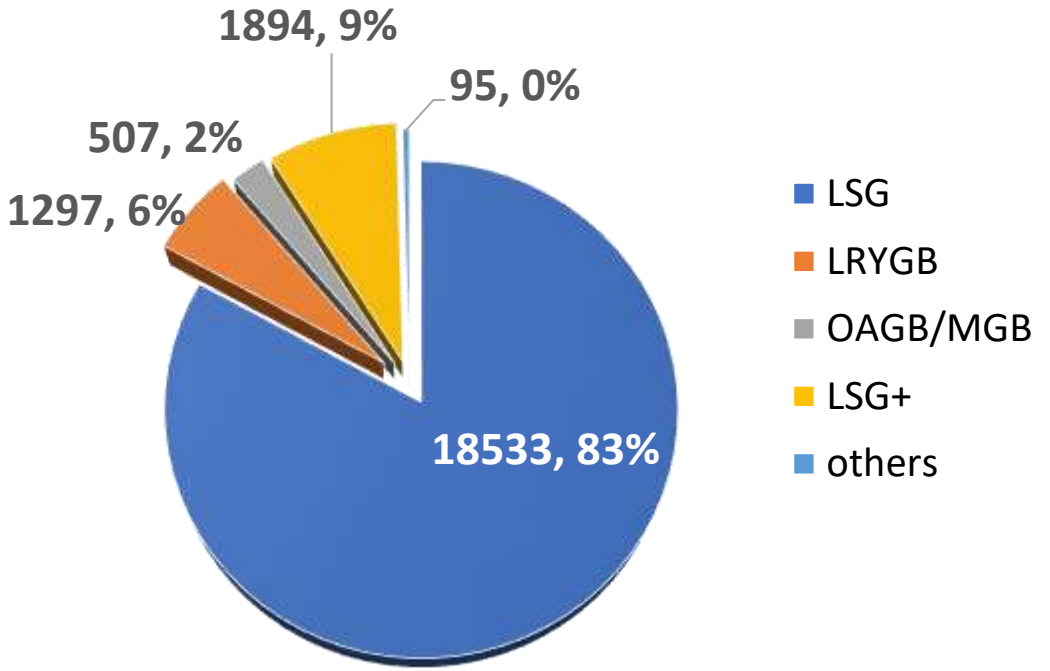
# Background I

Laparoscopic sleeve gastrectomy (LSG) has become the most performed bariatric procedure in China, accounting for 83% of all bariatric surgeries in 2021*



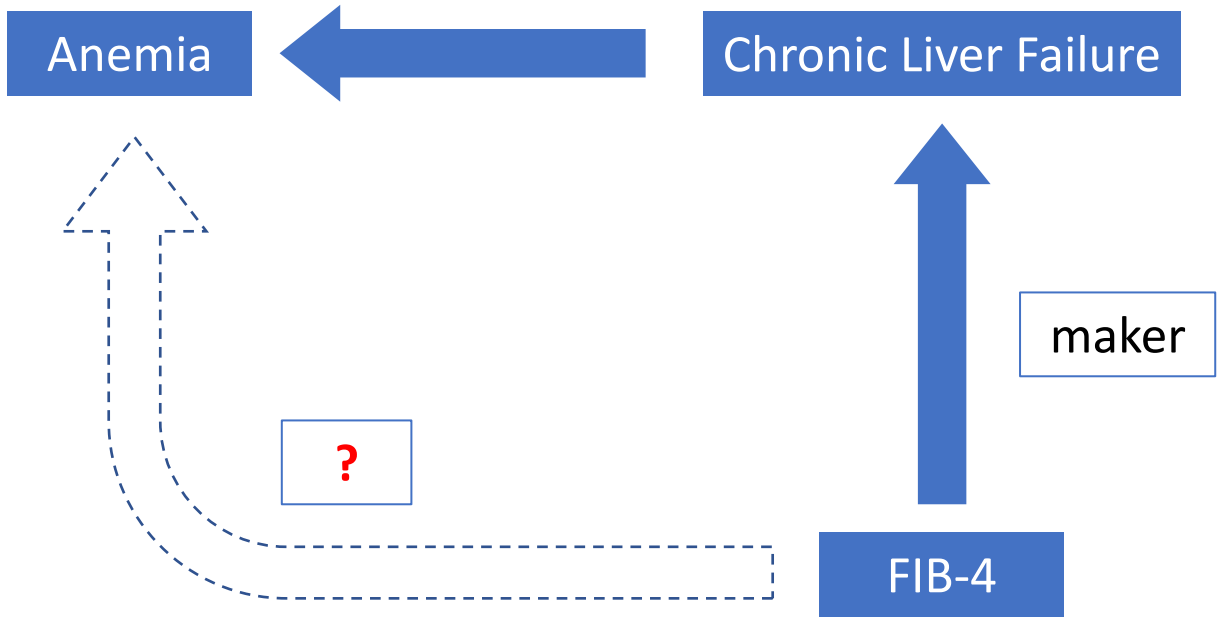

*: Chinese obesity and metabolic surgery database: annual report 2021. *Chin Electron J Obes Metab Dis*. 2022;08(01):15.

# Background II

- Anemia is a common complication after bariatric surgery, and it can have significant consequences for patients‘ health and well-being

- The incidence and related factors of postoperative anemia among Chinese patients undergoing LSG remains unknown

# Background III




As a liver-related manifestation, anemia can be affected by chronic liver failure

There was limited data on the association between the preoperative FIB-4 index, a non-invasive marker of liver fibrosis, and postoperative anemia

# Background IV

- Iron supplementation has been suggested as a potential intervention to prevent or treat anemia after bariatric surgery, but its effectiveness and safety in Chinese patients require further investigation

# Methods I

- **Study Subject:** a retrospective cohort study

  **681** patients who underwent bariatric surgery from 2012 to 2022 in Huashan Hospital, Shanghai, China

  Patients had experienced a follow-up of up to **5** years, with a semi-annually appointment

# Methods II

- **Surgery Procedure:** LSG

# Methods III

## Variable Assessment

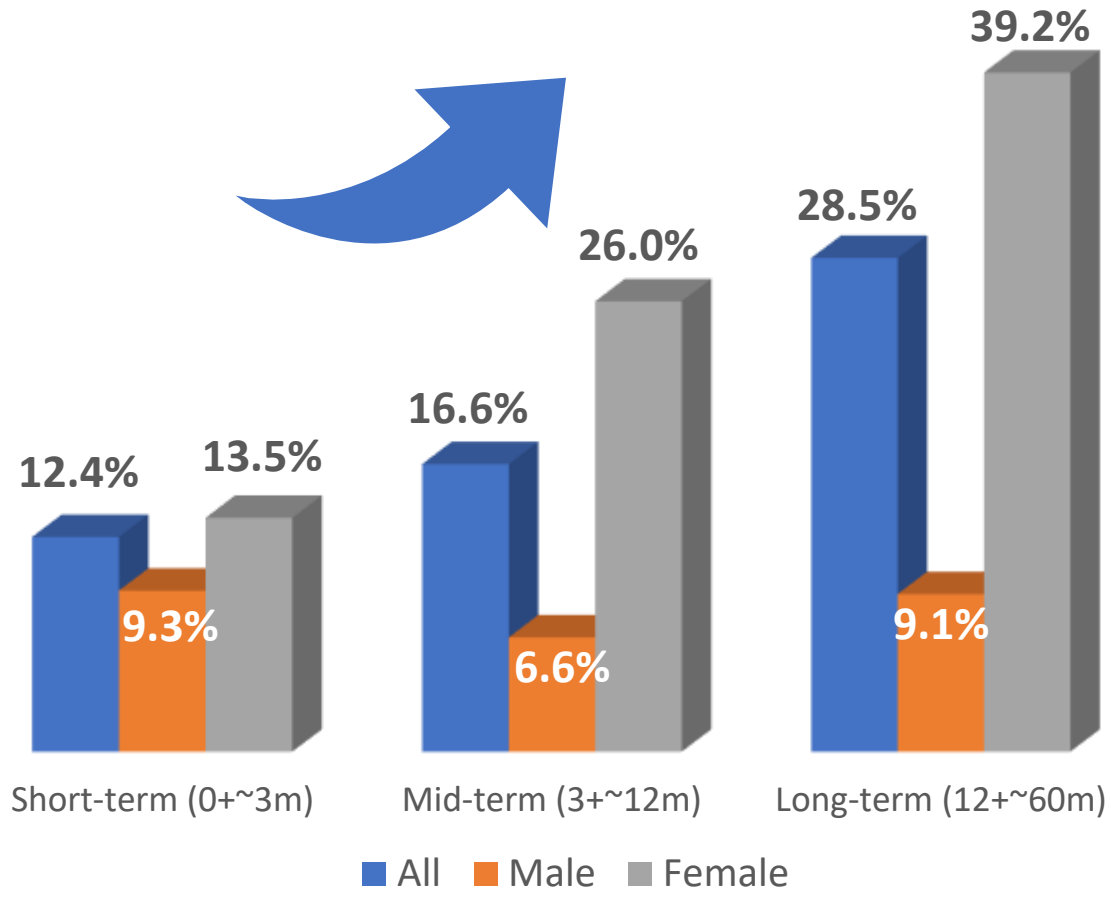
Physical examinations

Biochemical test: CBC, iron profile, liver function tests

FIB-4: (age [years] × AST [IU/L]) / (PLT count [109/L] × (ALT1/2[IU/L]))

# **Results** – Incidence of Anemia and Risk Factors

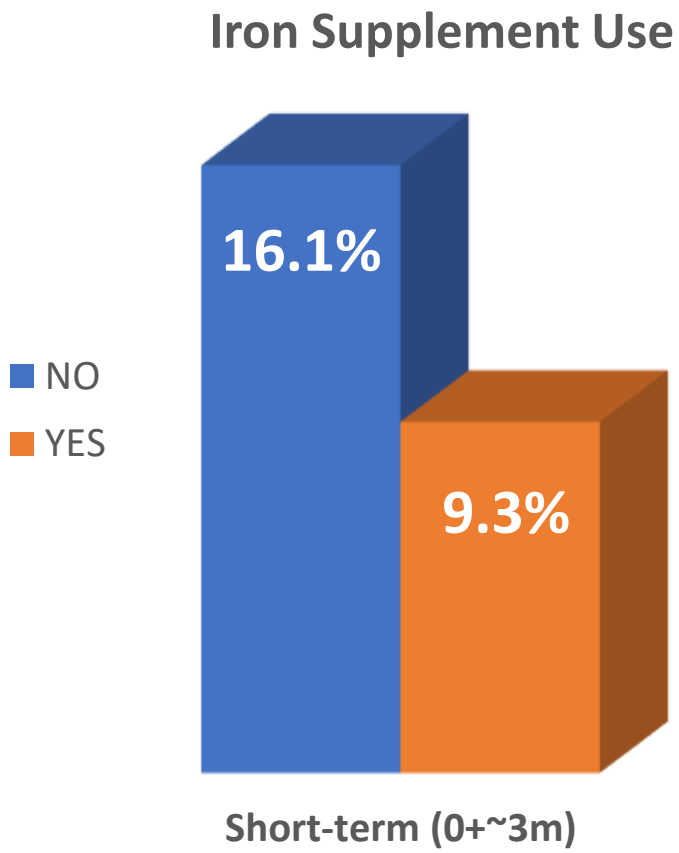
The cumulative incidence rates were continuously growing in the three periods.




Females were more prone to develop anemia after LSG surgery, comparing with males.

# **Results** – Incidence of Anemia and Risk Factors

In short-term follow-up, the risk of anemia was **1.7** folds higher in patients who did not use iron supplements postoperatively than in those who used.



# **Results** – Multivariable Analysis

- In the short-term, **iron supplement** use after surgery was significantly associated with lower risk of post-operative anemia in all patients.
- In the mid-term and long-term , **males** were less likely to develop anemia after LSG surgery.
- In the mid-term, patients with higher preoperative **FIB-4** level (>1.45) were more prone to anemia.
- No significant effects were observed for BMI, preoperative iron deficiency, or postoperative iron supplementation in long-term period.

# Conclusion

Female gender, advanced preoperative Fib-4 level, and a lack of iron supplementation after surgery were risk factors of postoperative anemia.

To identify the risk factors can aid in the early identification of patients at higher risk of developing anemia and help clinicians to implement appropriate screening, monitoring, and intervention strategies.

# Thanks

# and

# Welcome to Shanghai