



# Management of gastric variceal hemorrhage

**Charbel YAZBECK, MD**  
Ass. Prof. and head of GI division  
**NDS University Hospital, USEK**



# Varices and portal hypertension

- Varices are dilated submucosal veins
- Most common in distal esophagus and proximal stomach
- Associated with portal hypertension of any origin
- Most common cause being cirrhosis
- Despite advances in management mortality still high : 20 % at 6 weeks



# Epidemiology

- Gastroesophageal varices : 50 % of patients with cirrhosis
- Good correlation with severity of liver disease
  - 40 % in Child A
  - 85 % of Child C
- Gastric varices are less prevalent : 10 to 30 % of these patients
- Variceal bleeding occurs at a yearly rate of 5-15 %
- Variceal bleeding ceases spontaneously in 50 %
- Rebleeding rate : 40 % within 6 weeks
- 40 % of rebleeding occurs in within the first 5 days



# Gastric varices bleeding

- Occurs less frequently than esophageal
  - 10-30% of variceal hemorrhage
- More severe than esophageal
  - Higher mortality
- Rebleeding after spontaneous hemostasis : up to 90 %



# Acute variceal hemorrhage

- M ICU admission
- In cirrhotic patients : antibiotics
  - Ciprofloxacin
  - Ceftriaxone if high resistance to quinolones
- Hemodynamic stabilization
- Pharmacologic therapy to be started at admission



# Therapeutic options

- Pharmacological agents
- Endoscopic therapies
  - Ligation
  - Sclerosis
- TIPS
- Surgery
- Endovascular : BRTO



# As soon as possible

Do upper GI endoscopy

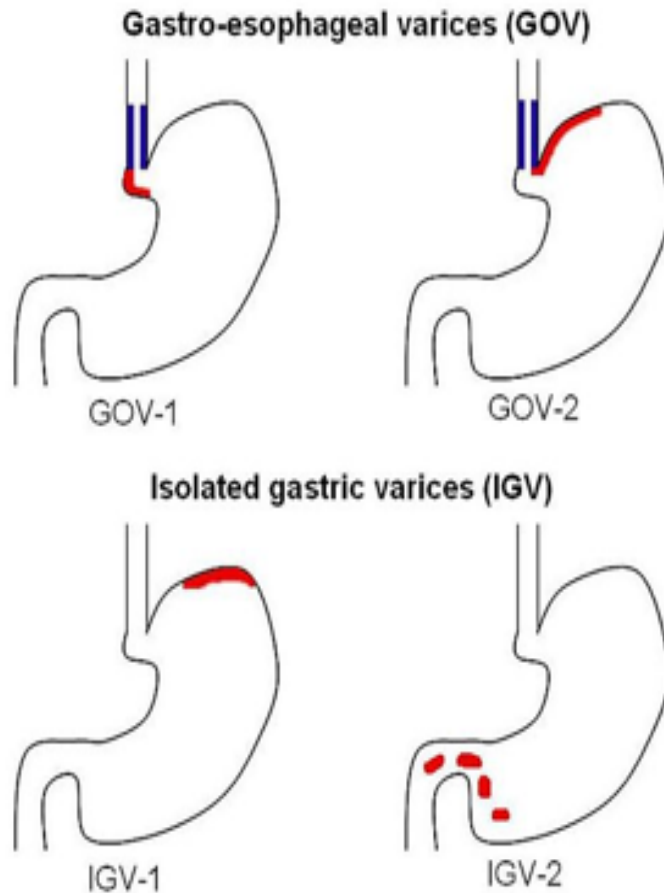
Document the cause & site

Adjust treatment

Endoscopic treatment



# The Sarin classification



- GOV-1 : 74 %
- GOV-2 : 21 %
- IGV-1 : < 2 %
- IGV-2 : < 4 %
- The RR of bleeding is highest with IGV-1 then in GOV-2
- IGV-1 & GOV-2 :
  - **fundal varices**
  - Most challenging varices to treat



# GOV-1 : management

- Continuation of esophageal varices
- Share same vascular anatomy
- Same response to treatment
- Endoscopic Band Ligation
- Use of Cyanoacrylate is useful and can be recommended in GOV-1



# Fundal varices management

## GOV-2 & IGV-1

- Prophylactic antibiotics
- Careful replacement of volemia
  - restrictive transfusion policy
- Early administration of vasoactive drugs
  - Terlipressin, Somatostatin or analogues
- Concomitant endoscopic therapy
  - 40 % of patients receiving only vasoactive drugs were in need to rescue therapy (TIPS ...) to achieve 5-days control of bleeding
- *It's not recommended to use vasoactive drugs alone*



# Endoscopic treatment

## Endoscopic Variceal Obliteration EVO

- Specific high quality data are limited
- High rate (> 90 %) of bleeding control with Cyanoacrylate (CA)
- Small-size RCT's :
  - CA vs. Endoscopic Band Ligation (EBL)
  - CA vs. Endoscopic Injection Sclerotherapy (EIS)
  - CA > to EBL and EIS in controlling bleeding
  - CA > to EBL and EIS in preventing secondary bleeding



# Experts opinion

- EVO with CA is the treatment of choice in GOV-2 and IGV-1
- If tissue-adhesive is not available : EBL can be used in GOV-2
- No studies have evaluated this issue



# EVO (CA) :

## technique and complications

- CA with lipiodol (1/1 ratio)
- Injections with 1 ml each time
- Complications :
  - Rebleeding secondary to extrusion : 5 %
  - Sepsis : 1 %
  - Emboli, gastric ulcer, mesenteric hematoma, hemoperitoneum, migration of glue
  - Complication mortality : < 1 %



# Experts opinion

- Combination therapy of endoscopic and vasoactive medications is considered a standard of care in esophageal varices bleeding
- In gastric variceal bleeding (because of the paucity of data) this attitude is recommended but needs to be approved by more studies
- **Recommendation in specialized centers**
  - combine EVO (CA) and vasoactive IV therapy (in general started at admission) as a first step treatment



# Secondary prophylaxis

- Rebleeding rates after EVO (CA) : 10 - 65 % - In large series : 15 %
- Repeat sessions every 2-4 weeks
- Eradication achieved in 2-4 sessions with 1 to 2 ml/session
- Ad beta-blockers (Propanolol)

First author, year (reference)	n	Eradication/hemostasis (%)	Rebleeding (%)	Follow-up (median)	Survival (%)	Complications (%)
Rajoriya, 2011 <sup>25</sup>	31	90	10	4 y	65 (1 y)	6.4
Mishra, 2010 <sup>32</sup>	33	100	10	26 mo	90 (2 y)	3
Choudhuri, 2010 <sup>26</sup>	108	89	10	30.7 + 17.2 mo	NA	NA
Belletrutti, 2008 <sup>27</sup>	34	84	12	11 mo	82 (1 y)	3
Marqués, 2008 <sup>28</sup>	48	87	20	18 mo	56 (NA)	6
Cheng, 2007 <sup>30</sup>	613	77	8	25 mo	95 (1 y)	5
Joo, 2007 <sup>17</sup>	85	98	29	24 mo	NA	3.5



# TIPS

- Is the treatment of choice if initial combination therapy failed
- Endoscopic second-attempt is not considered (contrary to what is suggested in esophageal varices)
- No RCT's evaluating the use of TIPS like initial treatment to achieve hemostasis in patient with IGV-1 but may be proposed in high risk failure patients (Child C or severe active bleeding in Child B patients)



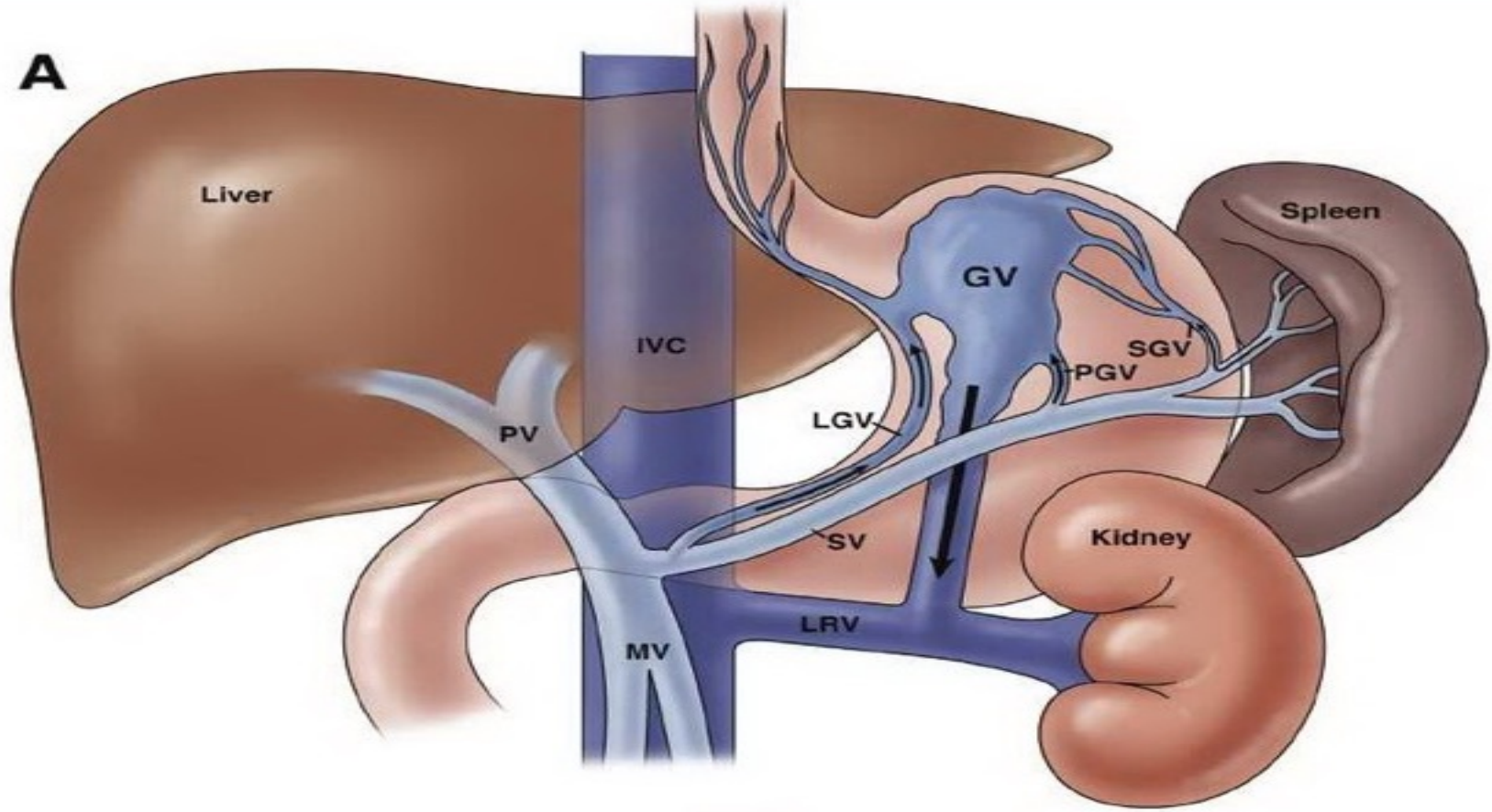


# Balloon-occluded retrograde transvenous obliteration (BRTO)

- Aims to directly obliterate the gastric varices (GV)
- Introduced by Kanagawa et al,
- Widely accepted in Japan and in some centers in USA
- Minimally invasive and highly effective to treat GV
- Needs fluoroscopy and training
  
- Anatomically : in most cases there is a gastrorenal or gastrocaval shunt



**A**

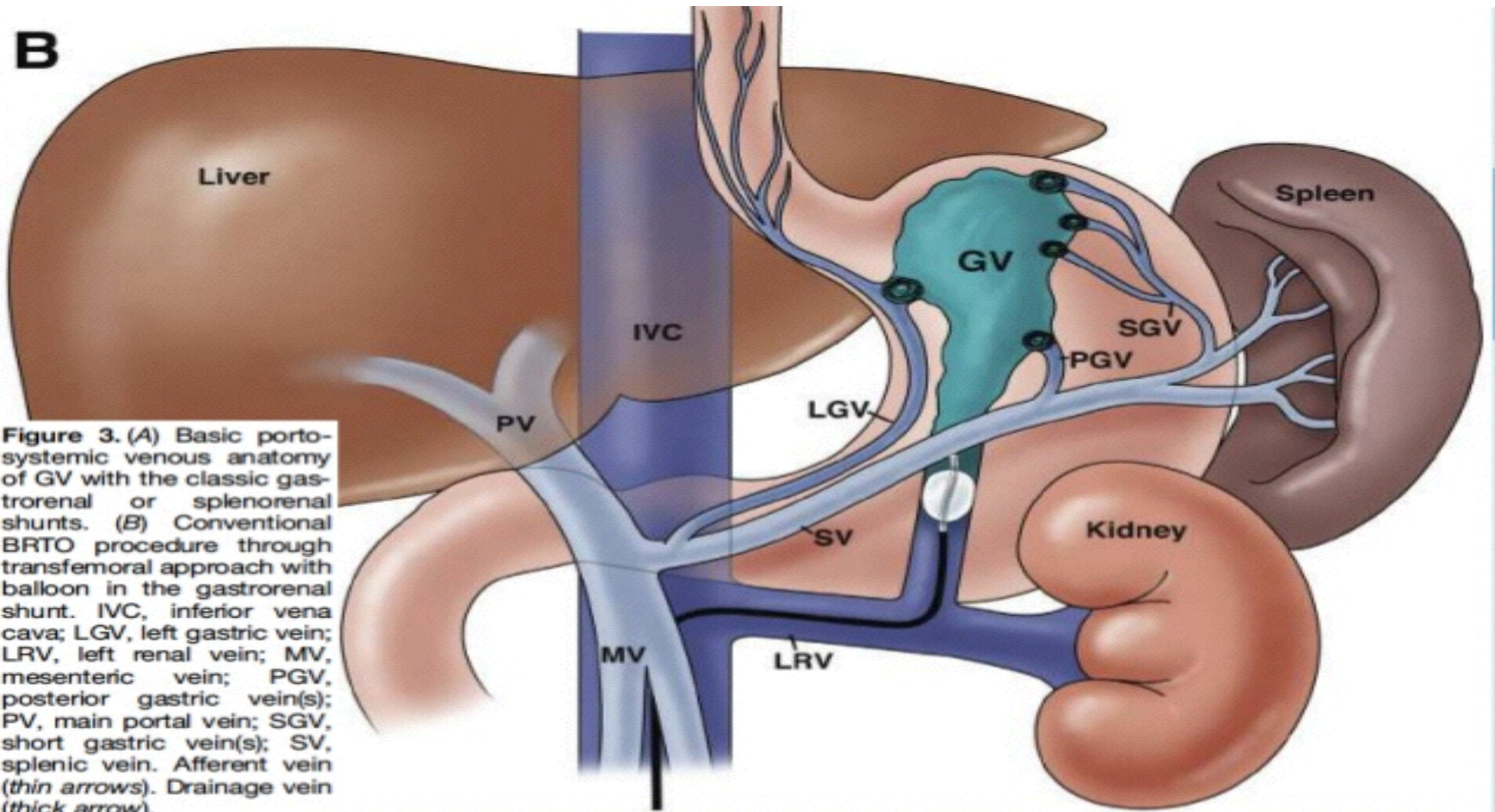


# BRTO : Technique

- Access to the gastroduodenal or gastroduodenal shunt through the right femoral vein
- Venography performed via the inflated balloon catheter
- Then GV are slowly but completely filled with a sclerosant (Ethanolamine Oleate)
- 30 to 50 minutes after the injection : as much of the remaining sclerosant as possible is aspirated via the catheter
- Finally the balloon is deflated and the catheter withdrawn
- *In some cases necessity of coil occlusion of small gastric veins*



# h



# BRTO : results

- Technical success (complete obliteration of GV) : 77-100 %
- In some studies repeat procedure was necessary to achieve goal
- Rebleeding after successful procedure : 0-15 %
- Some authors suggests that BRTO is superior to TIPS and EVO in preventing GV bleeding
  - (small sampling when BRTO used as prophylactic technique)



# side effects and advantages

- Epigastric and back pain : 76 %
- Fever : 26 %
- Hematuria : 53 %
- Bacterial peritonitis : 8 %
- Portal vein thrombosis : 4.3 %
- Renal vein thrombosis : 5 %
- Rarely : pulmonary embolism, coil migration
- Increase portal blood flow
- May improve liver function
- M a y r e d u c e encephalopathy

## But also

- I n c r e a s e p o r t a l hypertension
- I n c r e a s e e s o p h a g e a l varices
- I n c r e a s e r i s k o r p o r t a l hypertensive gastritis,

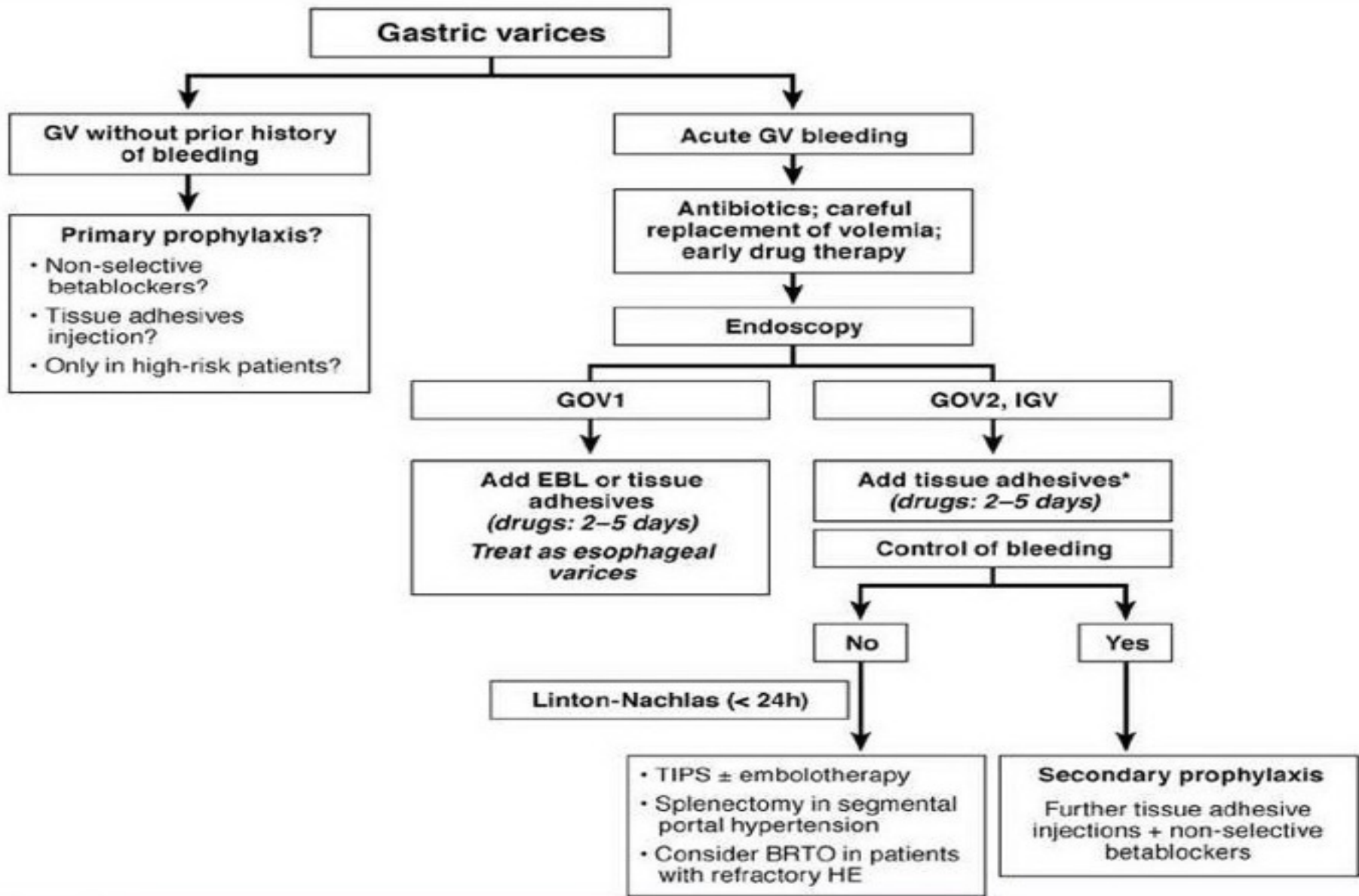




# IGV-2 : management

- Rare : lack of data
- No specific recommendation
- Management similar to that of IGV-1
- Optimal treatment not fully determined







# Thank You

