Prevention and Management of Gastroesophageal Varices and Variceal Hemorrhage in Cirrhosis

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P e a c c f ee s: N h g e .

1.

Classification	
Class I	Conditions for which there is evidence and/or general agreement that a given diagnostic evaluation, procedure or treatment is beneficial, useful, and effective.
Class II	Conditions for which there is conflicting evidence and/or a divergence of opinion about the usefulness/efficacy of a diagnostic evaluation, procedure or treatment.
Class IIa	Weight of evidence/opinion is in favor of usefulness/efficacy.
Class IIb	Usefulness/efficacy is less well established by evidence/opinion.
Class III	Conditions for which there is evidence and/or general agreement that a diagnostic evaluation/procedure/treatment is not useful/effective and in some cases may be harmful.
Level of Evidence	
Level A	Data derived from multiple randomized clinical trials or meta-analyses.
Level B	Data derived from a single randomized trial, or nonrandomized studies.
Level C	Only consensus opinion of experts, case studies, or standard-of-care.

C , , . - - . I - , 20%-30% ,[8] - .[9,10] - . H , 2 : (1) - [11]; (2) .[12] 7 , b h ' - ( ) . 7 , , (HV) , , , . 7 HV - .[13] 7 HV (. .,) (FHV) - , . 7 (HV G), , - , , .[14] , K , HV G , , , . 7 HV G 3-5 H . 7 HV G HV G ,[15,16] ,[17-19] - ,[17,20,21] .[19,21-23] K - , . HV G - - ,[14] . G - , - .√ . - HV G 10-12 H .[15,24] G 50% . 7 (7 2); 40% C A , 85% C C .[25] - - .[26] I 16% C - .[27] 8% ,[16,28] HV G >10 H .[16]

2. -

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	1	2	
Encephalopathy	None	Grade 1-2 (or precipitant-induced)	Grade 3-4 (chronic)
Ascites	None	Mild/Moderate (diuretic-responsive)	Tense (diuretic-refractory)
Bilirubin (mg/dL)	<2	2–3	>3
Albumin (g/dL)	>3.5	2.3–3.5	<2.8
PT (sec prolonged) or INR	<4 <1.7	4–6 1.7–2.3	>6 >2.3

*5-6 points: Child A; 7-9 points: Child B; 10-15 points: Child C.

8% . D (C H 20% (HV G - B/C), , ( ) - - .[28]

V 5%- 15%, , (15%) .[29] -

(C B/C) .[29] A

40% , - , 20% 6 .[30-32] HV G >20 H (24) (-) - (83% . 29%) 1- (64% . 20%) - .[33,34] 60% , 1-2 .[35,36]

V .V . A , .[37] B , , HV G. T , HV G , . I , HV G <12 H .[17,20] I - HV G 20% T .[18] HV G <12

,[36] , - , .[21] G - 5%-33% 25% 2 , .[38]

(> > , >10 , 5-10 , <5 ,), C (C>B>A), (-).[39] G .[38] G - (G V) 2 . T T 1 (G V 1) , . T .T 2 (G V 2) - . I (IGV) 2 .T 1 (IGV 1) , 2 (IV G2) - , , . T IGV 1 .

(EGD). I

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A , β-
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/ 15%-25%,[25]
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β- -
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EGD
.[6,41] I
, EGD
2-3 .[6] I

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Vasoconstrictors (e.g., β-blockers)	↓↓	↑	↓
Venodilators (e.g., nitrates)	↓	↓*	↓
Endoscopic therapy	–	–	–
TIPS / Shunt therapy	↑	↓↓↓	↓↓↓

*Although theoretically nitrates act by decreasing resistance, they actually act by decreasing portal flow through a decrease in mean arterial pressure.

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.[41,42]
EGD . I
β- (. .,
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EGD
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Recommendations

1. Screening esophagogastroduodenoscopy (EGD) for the diagnosis of esophageal and gastric varices is recommended when the diagnosis of cirrhosis is made (Class IIa, Level C).

2. On EGD, esophageal varices should be graded as small or large (>5 mm) with the latter classification encompassing medium-sized varices when 3 grades are used (small, medium, large). The presence or absence of red signs (red wale marks or red spots) on varices should be noted (Class IIa, Level C).

Rationale for the management of varices

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HV G -
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(48%)
(32%). K
20 (18%)
6 (6%) . T
β-
.[45] G ,
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2-3
, -
.[6,42]

Recommendations

3. In patients with cirrhosis who do not have varices, nonselective β-blockers cannot be recommended to prevent their development (Class III, Level B).

4. In patients who have compensated cirrhosis and no varices on the initial EGD, it should be repeated in 3 years (Class I, Level C). If there is evidence of hepatic decompensation, EGD should be done at that time and repeated annually (Class I, Level C).

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(31% . 14%). H , -
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(11% 3)
(37% 3), .[53]
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β- , -
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Recommendations

5. In patients with cirrhosis and small varices that have not bled but have criteria for increased risk of

hemorrhage (Child B/C or presence of red wale marks on varices), nonselective β-blockers should be used for the prevention of first variceal hemorrhage (Class IIa, Level C).

6. In patients with cirrhosis and small varices that have not bled and have no criteria for increased risk of bleeding, β-blockers can be used, although their long-term benefit has not been established (Class III, Level B).

7. In patients with small varices that have not bled and who are not receiving β-blockers, EGD should be repeated in 2 years (Class I, Level C). If there is evidence of hepatic decompensation, EGD should be done at that time and repeated annually (Class I, Level C). In patients with small varices who receive β-blockers, a follow-up EGD is not necessary.

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A - 11 1,189 - β- (. ., - ,) -

- - β- (30% . 14% β- -),[35] 1 10 β- . β-

- .[54] A , - β- , , β- - .[55] β- (,) (β-1) , , - (β-2), . K β- (,)

. A HV G <12 H - ,[17] >20% [56] >10% [57] .

I , β- 25% . H , HV G

HV G,[58] - β- (,) .

20 ( ) (BID). 40 (D). B - β- ,[59] . A 15% - β- , , - (-), .[60] 7 β- , , . A - , 15% . 7 - (≈10%) - (≈17%)[60]; , .

E (EV) - β- - - ( ). 7 - : 8 596 (285 EV , 311 β-)[61]; 12 - 839 (410 EV , 429 β- -).[62] B EV - .7 - . A EV (4% . 13%), EV - - 10 (2 -) - 1 . 7 - . I β- , - (, ,) - , 10 β- (2). - - 18 , - ( ) EV (6 . 0).[63] 7 - , EV -

- .[64,65] I , 2 -
[66,67] ,[68]
- , E⁄
[66] [67,68] - [78] .[79] I ,
. A , 133 -
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Therapies not recommended for primary prophylaxis

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sary. If a patient is treated with EVL, it should be repeated every 1-2 weeks until obliteration with the first surveillance EGD performed 1-3 months after obliteration and then every 6-12 months to check for variceal recurrence (Class I, Level C).

11. Nitrates (either alone or in combination with β-blockers), shunt therapy, or sclerotherapy should not be used in the primary prophylaxis of variceal hemorrhage (Class III, Level A).

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F√ II .[89]

A C -

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Recommendations

12. Acute GI hemorrhage in a patient with cirrhosis is an emergency that requires prompt attention with intravascular volume support and blood transfusions, being careful to maintain a hemoglobin of ~8 g/dL (Class I, Level B).

13. Short-term (maximum 7 days) antibiotic prophylaxis should be instituted in any patient with cirrhosis and GI hemorrhage (Class I, Level A). Oral norfloxacin (400 mg BID) or intravenous ciprofloxacin (in patients in whom oral administration is not possible) is the recommended antibiotic (Class I, Level A). In patients with advanced cirrhosis intravenous ceftriaxone (1 g/day) may be preferable particularly in centers with a high prevalence of quinolone-resistant organisms (Class I, Level B).

14. Pharmacological therapy (somatostatin or its analogues octreotide and vapreotide; terlipressin) should be initiated as soon as variceal hemorrhage is suspected and continued for 3-5 days after diagnosis is confirmed (Class I, Level A).

15. EGD, performed within 12 hours, should be used to make the diagnosis and to treat variceal hemorrhage, either with EVL or sclerotherapy (Class I, Level A).

16. TIPS is indicated in patients in whom hemorrhage from esophageal varices cannot be controlled or in whom bleeding recurs despite combined pharmacological and endoscopic therapy (Class I, Level C).

17. Balloon tamponade should be used as a temporizing measure (maximum 24 hours) in patients with uncontrollable bleeding for whom a more definitive therapy (e.g., TIPS or endoscopic therapy) is planned (Class I, Level B).

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Recommendations

18. In patients who bleed from gastric fundal varices, endoscopic variceal obturation using tissue adhesives such as cyanoacrylate is preferred, where available. Otherwise, EVL is an option (Class I, Level B).

19. A TIPS should be considered in patients in whom hemorrhage from fundal varices cannot be controlled or in whom bleeding recurs despite combined pharmacological and endoscopic therapy (Class I, Level B).

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33%.[35,36] I

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Therapies not recommended for secondary prophylaxis

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Recommendations

20. Patients with cirrhosis who survive an episode of active variceal hemorrhage should receive therapy to prevent recurrence of variceal hemorrhage (secondary prophylaxis) (Class I, Level A).

21. Combination of nonselective β-blockers plus EVL is the best option for secondary prophylaxis of variceal hemorrhage (Class I, Level A).

22. The nonselective β-blocker should be adjusted to the maximal tolerated dose. EVL should be repeated every 1-2 weeks until obliteration with the first surveillance EGD performed 1-3 months after obliteration and then every 6-12 months to check for variceal recurrence (Class I, Level C).

23. TIPS should be considered in patients who are Child A or B who experience recurrent variceal hemorrhage despite combination pharmacological and endoscopic therapy. In centers where the expertise is available, surgical shunt can be considered in Child A patients (Class I, Level A).

24. Patients who are otherwise transplant candidates should be referred to a transplant center for

evaluation (Class I, Level C).

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Ac edg e : T G C A A K D C A C G .T

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AAK D G C - C. K , .D., K (C C); G . D , .D. (B); K B , .D.; A - C , .D., . K .; K . C , - .D.; T J. D , .D.; K . F , .D.; K -H B. H , .D.; C D. H , .D.; D . , .D.; K. , .D.; B A. , .D.; J B. , .D.; C , ; . Z , .D. ACG C J I , .D., FACG (C C); D B , .D.; D B , .D., FACG; B , .D., FACG; C , .D.; C , .D., FACG; J C , .D., FACG; K - D V , .D., FACG; K E , .D.; F , .D, FACG; K H , .D.; C K , .D., FACG; T K , .D., FACG; J , .D.; A , .D.; J 'B , .D.; J , K., .D., ACG; H , .D., FACG; A , .D., FACG; K , .D., ACG; A K , .D., K, FACG; K K , .D., FACG; V , .D.; J V , .D., H, FACG; V , .D.; Z , .D.

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