MAYO CLINIC

Hospital Medicine Update

ACP WI Chapter Meeting

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5th Generation Troponin- sensitive

- **Male <15ng/L, Female <10ng/L**
- **Check troponin at 0hr, 2hr, and 6hr (if required)- delta >10-12 ng/L, with EKG changes, typical chest pain**
- Elevated values = myocardial *injury* and **not necessarily** acute myocardial infarct
- Risk stratification = clinical context, ECG results, and sometimes, serial hs-cTnT values

Hypertension

Treating Hypertension to Reduce the Incidence of HF

COR	LOE	Recommendations	Comment/ Rationale
I	B-R	Stage A HF, **goal <130/80 mm Hg**.	NEW: Recommendation reflects new RCT data.

2017 ACC/AHA/HFSA Focused Update of the 2013 ACCF/AHA Guideline for the Management of Heart Failure

- **Severity of bleeding**
  - 1. Critical site?
  - 2. Hemodynamically unstable
  - 3. Hb drop ≥2 g/dl or need for 2+ Unit RBC
  - **If any 3 is yes- Stop DOAC**
  - **Charcoal** if ingested <2 hours
  - **CKD/ ESRD**: HD may be indicated

Oral Anticoagulant	First Line, when available	Second Line	For All Patients	Not Indicated
Dabigatran (Pradaxa)	5g Idarucizumab (Praxabind) IV	4F-PCC or aPCC	Activated charcoal (within 2-4 hours)	Plasma
Edoxaban (Savaysa)	4F-PCC	aPCC	Activated charcoal (within 2-4 hours)	Idarucizumab, Plasma
4F-PCC (K-Centra)	(4 Factor Prothrombin Complex Concentrate- 50 units/kg IV **Factors II, VII, IX, X**			
aPCC	Activated Prothrombin complex concentrate- 50 units/kg IV **All factors in inactive and active form**			

Oral Anticoagulant	Last Dose < 8 hours / unknown	Last Dose > 8 hours	Second Line	For All Patients	Not Indicated
Apixaban (Eliquis) (> 5mg) and **Rivaroxaban (Xarelto)** (≥ 10mg)	High dose Andexanet	Low dose Andexanet	4F-PCC or aPCC	Activated charcoal (within 2-4 hours)	Idarucizumab, Plasma
Apixaban (< 5mg) and Rivaroxaban (≤ 10mg)	Low dose Andexanet	Low dose Andexanet	4F-PCC or aPCC	Activated charcoal (within 2-4 hours)	
High Dose:	**Initial IV Bolus: 800 mg** at a target rate of 30 mg/min **Follow-on IV Infusion: 8 mg/min for up to 120 minutes**				
Low Dose	**Initial IV Bolus: 400 mg** at a target rate of 30 mg/min **Follow-on IV Infusion: 4 mg/min for up to 120 minutes**				

Retrospective cohort study 445 371, adults, 801 261 hospitalizations, 1/2010- 12-2014

a) **Moderate anemia** (Hb 7- 10 g/dL) at discharge **increased** from **20% to 25%** (*P* < 0.001)
b) **RBC transfusion declined by 28%** (39.8 to 28.5 RBC units per 1000 patients; *P* < 0.001).
c) Patients: **moderate anemia resolved within 6 months** of discharge **decreased from 42% to 34%** (*P* < 0.001)
d) **RBC transfusion decreased: 19% to 17%**
e) **6-month Re-hospitalization: decreased from 37% to 33%,** (*P* < 0.001 for both).
f) **6-mth mortality rate decreased** from **16.1% to 15.6%** (*P* = 0.004)

Infectious Diseases Consultation Reduces 30-Day and 1-Year All-Cause Mortality for Multidrug-Resistant Organism Infections

- JP Burnham, MA Olsen, D Stwalley, JH Kwon, HM Babcock, et al.
- *Open Forum Infectious Diseases* 2018;5(3):1-5.

Study Overview

- Retrospective cohort study: 4214 patients with MDROs in a sterile site or bronchoalveolar lavage/bronchial wash culture.
- **ID consultation:**
- **Reductions in 30-day and 1-year mortality** for
  - **Resistant *S. aureus* (HR, 0.48**; 95% CI, 0.36–0.63; and HR, 0.73, 95% CI, 0.61–0.86).
  - ***Enterobacteriaceae* (HR, 0.41**; 95% CI, 0.27–0.64; and HR, 0.74; 95% CI, 0.59–0.94).
- And in **30-day mortality** for
  - **Polymicrobial infections (HR, 0.51**; 95% CI, 0.31–0.86).
- But no reduction for *Acinetobacter, Pseudomonas,* or *Enterobacter,* possibly due to small sample sizes.

- 70 yr. lady admitted for failed out-patient pneumonia treatment, receiving IV levofloxacin day # 3, now has 3+ watery stools, Stool C-diff +ve
- Vital stable, minimal abdominal tenderness, non-toxic, How do you manage?
- A. Metronidazole 500mg p.o. TID for 14 days
- B) Vancomycin 125mg p.o. QID for 14 days
- C) Vancomycin 125 mg p.o. QID for 10 days
- D) Fidaxomycin 200 mg p.o. BID for 10 days
- E) Refer patient for fecal transplant

Clinical Definition	Supportive Clinical Data	Recommended Treatment	Strength of Recommendation/ Quality of Evidence
Initial episode, severe	WBC ≥1500, Cr. >1.5	• **VAN 125 mg QID X 10 days** Strong/High • **FDX 200 mg BID X 10 days** Strong/High	Strong/High Strong/High
Initial episode, non-severe	WBC ≤15000, Cr. <1.5	• If above agents are unavailable: Metronidazole, 500 mg TID X 10 days	Weak/High
Fulminant episode, (Hypotension, shock, ileus, megacolon)	• **VAN, 500 mg QID (p.o/ NG tube, If ileus add rectal instillation of VAN) + Intravenously administered metronidazole (**500 mg every 8 hours)		Strong/Moderate (oral VAN); Weak/Low (rectal VAN); Strong/Moderate (iv metronidazole)

First recurrence	**VAN 125 mg QID X 10 days** if metronidazole was used for the initial episode, OR	Weak/Low
	• Use a **prolonged tapered and pulsed VAN regimen** if a standard regimen was used for the initial episode (eg, 125 mg 4 times per day for 10–14 days, 2 times per day for a week, once per day for a week, and then every 2 or 3 days for 2–8 weeks), OR	Weak/Low
	• **FDX 200 mg BID X 10 days** if VAN was used for the initial episode	**Weak/Moderate**
Second or subsequent recurrence	• VAN in a tapered and pulsed regimen, OR	Weak/Low
	• VAN, 125 mg 4 times per day by mouth for 10 days followed by Rifaximin 400 mg 3 times daily for 20 days, OR	Weak/Low
	• FDX 200 mg given twice daily for 10 days, OR	Weak/Low
	• **Fecal microbiota transplantation**	**Strong/Moderate**

Mortality of Hospitalised Internal Medicine Patients Bedspaced to Non-Internal Medicine Inpatient Units: Retrospective Cohort Study

- AD Bai,S Srivastava,GA Tomlinson, CA Smith, CM Bell, et al.
- *BMJ Quality & Safety* 2018; 27:11–20.

Study Overview

- Retrospective cohort study of 3243 consecutive GIM admissions between January 1, 2015 and January 1, 2016. GIM wards (2118, **65%**) and off-service wards (1125, **35%**).
- **Inpatient mortality:**

  88/2118 **(4%**) of GIM ward

  88/1125 (**8%**) of off-service ward
- **Off-service patients had HR of 3.42** (95% CI 2.23 to 5.26; P<0.0001) for inpatient mortality at admission, but subsequently improved.

Adjunctive Intermittent Pneumatic Compression for Venous Thromboprophylaxis

YM Arabi, F Al-Hameed, KEA Burns, S Mehta, SJ Alsolamy et al.

- *N Engl J Med* 2019;380:1305-1315.

- 2003 critically ill adult patients, randomly assigned to IPC (991) or control (1012).
- All: received UFH or LMWH.
- Control: IPCs for a median of **22 hours per day (!) for a median of 7 days.**
- Primary outcome: N**ew proximal lower limb DVT**, twice-weekly ultrasound.

Results

- Primary outcome:37/957 **(3.9%) of IPC patients** and 41/985 **(4.2%) of controls.**
  - RR 0.93 (95% CI, 0.60-1.44), *P*=0.74.
- **PE** or any lower limb **DVT** occurred in 103/991 (**10.4%**) of **IPC** patients and 95/1012 (**9.4%**) of controls.
  - RR 1.11 (95% CI, 0.85-1.44).
- **Death** any cause, at 90 days:
- 258/990 (**26.1%**) IPC and 270/1011 (**26.7%**).
  - RR 0.98 (95% CI, 0.84 to 1.13).

- Patient with Cr. 1.6, needs CT scan abdomen pelvis to rule out bowel perforation or abscess
- What would be your reno-protective strategy?

- A) n-Acetyl cysteine 1200mg, 2 and 12 hours before CT?
- B) NS at 150 ml/ hour for next 24 hours
- C) Nephrology consult
- D) Bicarbonate drip

Summary of Guidelines for Prevention of Contrast-Induced Nephropathy

Table 1. Summary of Guidelines for Prevention of Contrast-Induced Nephropathy.[3,4,13]

	ACCF/AHA/SCAI	ACR	KDIGO
Recommended	• Preprocedural risk assessment • Hydration with isotonic fluid (IV infusion) • Minimal contrast volume for CrCl <60 mL/min	• Procedure with noncontrast • Lowest dose of contrast dye • LOCM/IOCM • IV NS or sodium bicarbonate • Addition of N-AC for patients with high risk for CIN	• Individual risk-benefit assessment • Procedure with noncontrast • Isotonic fluid • LOCM
Not Recommended	• N-AC	• Theophylline • Fenoldopam • Prophylaxis with HD/ hemofiltration	• Mannitol • Furosemide • Theophylline, endothelin-1, fenoldopam
No recommendations	• Versus IOCM		• Sodium bicarbonate • N-AC

Abbreviations: ACCF, American College of Cardiology Foundation; AHA, American Heart Association; SCAI, Society for Cardiovascular Angiography and Interventions; ACR, American College of Radiology; KDIGO, Kidney Disease Improving Global Outcomes; IV, intravenous; CrCl, creatinine clearance; LOCM, low-osmolar contrast media; IOCM, iso-osmolar contrast media; NS, normal saline; N-AC, N-acetylcysteine; HD, hemodialysis.

Trang H. Au et al. Ann Pharmacother 2014;48:1332-1342