Acute Inferior MI With Criteria for Fibrinolysis

1. What are the risks of cerebral bleeding in a patient who has acute inferior MI with the criterias for thrombosis?

Question submitted by: Dr. Natalie Cauchon, Bathhurst, New Brunswick

The efficacy of thrombolytic therapy in reducing mortality from acute myocardial infarction (AMI) has been unequivocally shown. However, fibrinolysis is related to bleeding complications, including intracranial hemorrhage (ICH). Large Canadian and US registries have reported ICH rates between 0.65% and 0.95%.

ICH associated with AMI has a high morbidity and mortality, with approximately half of the patients dying during hospitalization and one-quarter surviving to hospital discharge with some neurologic deficit. Older age, female gender, history of cerebrovascular event, recent facial or head trauma and systolic hypertension on arrival (systolic BP > 160 mmHg) have been identified in multivariate logistic regression models to be important independent risks factors for ICH.

Patients receiving streptokinase (SK) rather than other newer fibrinolytic agents have a lower risk of ICH. The addition of glycoprotein IIb/IIIa blockers to the combination of fibrinolytic therapy, ASA and heparin increase the risk of major bleeding significantly.

Warfarin therapy poses a greater risk for nonhemorrhagic stroke than for ICH, which suggests that warfarin use may be a marker rather than a causal agent. Warfarin therapy should not be considered a major contraindication to fibrinolysis without the presence of other risk factors for ICH or a greatly prolonged international normalized ratio.

Appropriate fibrinolytic agent/heparin dosing and hypertension control reduces the risk for this complication. Primary angioplasty or SK use may be preferable in patients with acute MI who are at increased risk for ICH.

Resources:
1. Kandzari DE, Granger CB, Simoons ML, et al: Risk Factors For Intracranial Hemorrhage And Nonhemorrhagic Stroke After Fibrinolytic Therapy (From the GUSTO-I Trial). Am J Cardiol 2004; 93(4):458-61.
2. Gore JM, Granger CB, Simoons ML, et al: Stroke After Thrombolysis. Mortality And Functional Outcomes In The GUSTO-I Trial. Global Use Of Strategies To Open Occluded Coronary Arteries. Circulation 1995; 92(10): 2811-8.
3. Huynh T, Cox JL, Massel D, et al: Predictors of Intracranial Hemorrhage With Fibrinolytic Therapy In Unselected Community Patients: A Report From the FASTRAK II Project. Am Heart J 2004; 148(1):86-91.
4. Gurwitz JH, Gore JM, Goldberg RJ, et al: Risk For Intracranial Hemorrhage After Tissue Plasminogen Activator Treatment For Acute Myocardial Infarction. Participants In The National Registry Of Myocardial Infarction 2. Ann Intern Med 1998; 129(8):597-604.
5. Schulman S, Beyth RJ, Kearon C, et al: Hemorrhagic Complications Of Anticoagulant And Thrombolytic Treatment: American College Of Chest Physicians Evidence-Based Clinical Practice Guidelines (8th Edition). Chest 2008; 133(6 Suppl):257S-298S.

Answered by:
Dr. Brett Heilbron

Rehab for Post-Cardiac Revascularization Patients

2. What is the best time to start rehab on post-cardiac revascularization patients, due to stent or open surgery?

Question submitted by: Dr. Yves Leclerc, Kitchener, Ontario

The Access to Care guidelines from the Canadian Cardiovascular Society 2006/07, state that ideal time from discharge post elective percutaneous coronary intervention (PCI) to intake at cardiac rehabilitation should be seven days but allows for up to 60 days. If the PCI was non-elective (*i.e.,* during a hospital admission for MI), the guidelines suggest waiting 30 days prior to participating in a rehabilitation program to allow time for the patient to recover from the acute event.

The ideal referral time for post coronary artery bypass grafting is 21 to 30 days, with again acceptable referral times of up to 60 days. These are arbitrary guidelines developed by an expert panel and there is no prospective data on what is right or wrong with respect to patient outcomes. Patient wait times vary widely across the country based on available resources. In most parts of the country, there is a problem of under participation in cardiac rehabilitation programs, in that many or most of the eligible individuals are either not referred or do not attend due to a variety of patient factors.

Acknowledgement
Nicholas Giacomantonio MD FRCPC, Associate Professor of Medicine, Dalhousie University, Director, Cardiac Rehab. (Primary & Secondary Prevention), CDHA.

Answered by:
Dr. Sarah Ramer

Patient wait times vary widely across the country based on available resources.

Rules for Combining Statins and Fibrates

3. Is there a rule if you have to combine statins and fibrates?

Question submitted by: Dr. Jean Proulx, La Canardière, Quebec

When fibrates must be added to statin therapy for dyslipidemia, there is a reported increased risk of muscle toxicity, as high as 1% to 5%, with most of the statins when gemfibrozil is used. Only pravastatin and fluvastatin appear to have little muscle toxicity when used in combination with gemfibrozil, despite the observation that gemfibrozil doubles plasma concentrations of pravastatin.

Toxicity can also be minimized by using other statins in relatively low doses. It is recommended that pravastatin or perhaps fluvastatin (at 80 mg/day) is the statin of choice in patients treated with gemfibrozil (or other fibric acid derivatives). However, it should be used cautiously and only if the benefit is likely to outweigh the low risk of muscle toxicity.

Glucuronidation, which is an important pathway for renal excretion of lipophilic statins, appears to be significantly inhibited by gemfibrozil but not fenofibrate. In clinical studies, serum levels of statins increase 1.9 to 5.7 fold in gemfibrozil-treated subjects but are unchanged in fenofibrate-treated subjects.

Fenofibrate appears to be safer. In the Fenofibrate Intervention and Event Lowering in Diabetes (FIELD) trial of fenofibrate in almost 10,000 patients with Type 2 diabetes, there was a low incidence of myopathy (< 1%) that was not different from placebo, whether or not patients were also taking a statin. Fenofibrate then is the preferred fibrate in patients who require combined therapy with a statin and fibrate.

Despite the increased risk of myopathy associated with statin therapy, routine monitoring of serum creatine kinase (CK) levels is not recommended. However, it is useful to obtain a baseline serum CK before initiation of statin therapy for reference in case symptoms develop. Patients treated with statins should be alerted to report the new onset of myalgias or weakness. Coenzyme Q10 (CoQ10) supplementation is frequently discussed. However, there is little published evidence of benefit of CoQ10 for the treatment of myopathy.

Consequently, there is inadequate evidence to recommend CoQ10 supplementation for prevention of statin-induced muscle toxicity. Although there is very limited evidence for benefit, if a patient requires a statin and experiences muscle pain while on pravastatin or fluvastatin, the two statins felt to have the lowest risk of myopathy, some experts have suggested a trial of supplementation with CoQ10 at a dose of 150 mg to 200 mg q.d. prior to rechallenge and during the course of statin therapy.

Answered by:
Dr. Wayne Warnica

When to Consider Long-Term Anticoagulation

4. Which patients, who require occasional ER cardioversion of paroxysmal atrial fibrillation (AF) should be considered for long-term anticoagulation?

Question submitted by: Dr. Bruce Wong, Victoria, British Columbia

The indications for anticoagulation among patients with paroxysmal AF are the same as those for patients with persistent AF, as the absolute risk of stroke is the same in both of these groups of patients. The most commonly used tool to determine the need for anticoagulation among patients with AF is the CHADS2 score:

- **C**ongestive heart failure: one point
- **H**ypertension: one point
- **A**ge > 75: one point
- **D**iabetes: one point
- **S**troke or transient ischemic attack previously: two points

Anticoagulation with warfarin is recommended for all scoring two or more points. Those scoring one point can be treated with warfarin or ASA and those scoring zero should be treated with ASA alone.

Resource
1. Gage BF, Waterman AD, Shannon W, et al: Validation Of Clinical Classification Schemes For Predicting Stroke: Results From The National Registry Of Atrial Fibrillation. JAMA 2001; 285(22):2864-70.

Answered by:
Dr. Sarah Ramer

Raising HDL-C

5. I am hearing a lot about drugs to raise HDL-C rather than lower LDL-C. Could you comment on this strategy and the new drugs for same?

Question submitted by: Dr. Jana Siddrew, Prince George, Britich Columbia,

HDL-C concentration and the "risk ratio" (total cholesterol/HDL-C) are fairly accurate predictors of future coronary events.

In one study, increasing the HDL-C with gemfibrozil (in post MI patients with low HDL-C) reduced recurrent MI.

Another study using fenofibrate in diabetics was "neutral." Although torcetrapib increased HDL-C substantially, there was no benefit and even a suggestion of harm. Niacin combined with a "statin" has shown promising preliminary results. However, for the moment, LDL-C concentration remains our primary target.

Answered by:
Dr. Thomas W. Wilson