Mercy Heart Institute
CARDIAC MONITOR
For healthcare professionals
Spring/Summer 2006

Mercy General, Mercy San Juan hospitals cut door-to-Cath Lab times

Vision Statement

In conjunction with the Sisters of Mercy, our cardiovascular care team is dedicated to providing patients with compassionate, quality, cost-effective care through state-of-the art advancements in research, diagnostic screening, surgical and interventional procedures, clinical education and preventive/wellness programs for the improvement of cardiovascular health.

***Cardiac Monitor* — a resource for you**

Distribution of *Cardiac Monitor* is intended for cardiologists and primary care physicians. The information included in this newsletter is provided as an educational service. Mercy Heart Institute respects your privacy. If you prefer not to receive any further communications from us, please send a brief note to Candice Brooks, Mercy Heart Institute, 3939 J Street, Suite 220, Sacramento, CA 95819, and include the mailing label from this newsletter if possible. It may take up to 30 days to process your request.

Heart disease continues to be the number one killer of Americans, both men and women. Receiving fast, effective care at the onset of a cardiac event can mean the difference between a successful intervention and serious complications such as arrhythmias, heart failure, permanent heart damage and possibly death.

Along with Mercy San Juan Medical Center's "Cardiac Alert" program, a collaborative effort among Mercy General Hospital's cardiac and emergency departments and emergency services personnel (EMS) — including the Elk Grove, Sacramento Metro and Sacramento Fire Departments — has significantly reduced the time it takes for patients to get the appropriate level of cardiac care.

According to the American College of Cardiology Guidelines, patients with a heart attack should receive angioplasty procedures within 90 minutes of reaching the Emergency Department. Mercy General and Mercy San Juan now have average times of 84 and 72 minutes, respectively.

Improving door-to-balloon times

Mercy has implemented a number of strategies to improve its door-to-balloon times. The first step is acknowledging the field assessments of paramedics and acting on chest pain patients immediately when they arrive in the ED.

When the Emergency Department receives notification from EMS of a suspected acute myocardial infarction (AMI), the following steps are taken:

- The ED charge nurse notifies Cath Lab and pages cardiologist
- A critical care treatment area is prepared
- When the patient arrives, nurses immediately do ECG, start IV line and draw necessary labs
- Cardiologist meets patient in the ED upon arrival

Having a standard process in place for rapid assessment of AMI patients is a team effort: 1) Acting quickly on EMS assessments builds trust in Mercy's commitment to excellent cardiac care. 2) By alerting the Cath Lab in advance, non-emergent cases can be held and a Cath Lab suite made available as soon as the cardiologist makes the decision to take the patient. 3) Having a dedicated ECG machine for triage allows Emergency staff to respond faster.

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Steps to reduce door-to-balloon time at Mercy General, Mercy San Juan

- Collaboration among emergency medical services, Emergency Department and Cath Lab
- ECGs done at triage or before
- Cardiologists and Cath Lab notified simultaneously
- Concurrent review of patient so immediate feedback can be given to ED staff, cardiologist or Cath lab staff
- Statistics regularly shared
- Ongoing review, system improvements

The average door-to-balloon time at Mercy General Hospital has decreased from 110 minutes three years ago to an average of 84 minutes today. At Mercy San Juan, the door-to-balloon time was 139 minutes three years ago and is 72 minutes today. The national recommended standard is 90 minutes.

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CARDIAC MONITOR

RESEARCH NEWS

Mercy Heart Institute participant in global TRA-PCI trial

Mercy Heart Institute is one of 125 centers globally that is participating in the TRA-PCI drug study. This phase II trial will study the safety of SCH530348, a thrombin receptor antagonist.

Oral antiplatelet drugs remain at the forefront of investigation of antithrombotic agents for chronic use because antiplatelet drugs are of proven benefit to subjects with unstable angina, myocardial infarction, stroke, peripheral artery disease and conditions with high risk of embolism (e.g., atrial fibrillation). SCH530348 is an adjunctive therapy to Plavix and aspirin, which are the currently recognized "gold standard" oral antiplatelet agents.

Key agonists for the various platelet surface receptors include thromboxane A2, adenosine diphospate (ADP), collagen and thrombin. Currently the only effective agent against thromboxane A2 is aspirin. Although ADP is a relatively weak agonist for the platelet P2Y1 and P2Y12 receptors, it is the key cofactor in platelet activation induced by stronger agonists (e.g., thrombin), which results in release of more ADP from the activated platelet.

Plavix is a pro-drug yielding an active metabolite that binds irreversibly to the P2Y12 receptor. Thrombin plays a key role in coagulation and hemostasis partially through the activation of platelets via stimulation of protease-activated receptor 1 (PAR-1) on the platelet surface. SCH 530348 is a selective PAR-1 antagonist with no intrinsic agonist activity. Greater than 90% mean platelet inhibition was observed at one hour with 20 and 40 mg of SCH530348, and at one to two hours with the 10 mg dose of SCH530348.

Potential patients are those undergoing non-emergent PCI. After determining eligibility, patients will receive a 10 mg loading dose of SCH530348 or placebo approximately one hour prior to PCI. After PCI, the patients will be given a maintenance dose of 0.5, 1 or 2.5 mg once daily for 60 days (SCH530348 or placebo depending on the first randomization). Patients will return for an office visit at 30 and 60 days and telephone follow-up at 90 and 120 days.

Mercy General, Mercy San Juan Hospitals Cut Door-to-Cath Lab times

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Prior to implementing ECGs in triage, the average door-to-ECG times for chest pain patients at Mercy General and Mercy San Juan were 11 minutes and 13 minutes, respectively (the national goal is 10 minutes). Now the average time is 2.8 minutes at Mercy General and 2.0 minutes at Mercy San Juan.

Chest Pain Center

"If a patient is exhibiting signs of cardiac problems but it is not an emergency, they are taken to Mercy General's Chest Pain Center where they are monitored by caregivers who are trained in cardiac care, as well as a Hospitalist who determines the appropriate next steps," says Jane Crable, Interim Vice President of Cardiovascular Services.

Similarly, Chest Pain Evaluation Protocol (CPEP) developed at Mercy San Juan seven years ago provides rapid evaluation of Emergency Department patients presenting with low-risk chest pain through a series of tests.

Mercy's Hospitalist physicians have worked closely with hospital departments, including Nuclear Medicine, to order and access fast test results that help determine the appropriate diagnosis and course of treatment. The goal is to have the patient either "ruled in" or "ruled out" for an MI or acute coronary syndrome within eight hours of arrival.

The ability to observe patients in an appropriate setting with caregivers who are trained to follow these types of patients is a tremendous service to the community.

Physicians should advise patients experiencing chest pains to call 911 — many ambulances now have ECG equipment they can use in transport — or go to the Emergency Room.

PHARMACY CORNER

Cardiovascular health and sleep medications

By Lidia Leong, Pharmacy Student, University of the Pacific

Nearly 70 million Americans suffer from chronic sleep loss. Because insomnia disrupts stages of sleep beneficial to the heart, cardiac patients should be educated about sleep hygiene and treated for insomnia when appropriate.

The principles of sleep hygiene involve making therapeutic lifestyle changes to improve sleep. The National Institutes of Health offers a publication on sleep hygiene called *Your Guide to Healthy Sleep* (www.nhlbi.nih.gov/health/public/sleep/healthy_sleep.htm) that can be useful for patients. Avoiding medications that disrupt sleep is one challenging aspect of sleep hygiene. In cardiac patients, nocturia due to diuretic use is a common sleep disruption. To minimize nocturia, instruct patients to take diuretics in the morning and limit liquids intake in the evening. Other medications that induce insomnia include anticonvulsants, antidepressants, steroids and bronchodilators. Medication reviews can be done to identify insomnia-inducing drugs and find possible solutions.

If hygiene is inadequate, cautiously approach the use of over-the-counter (OTC) products containing diphenhydramine or doxylamine. Because of anticholinergic effects, both agents are contraindicated in narrow-angle glaucoma and prostatic hypertrophy. They should be avoided in elderly/debilitated patients since cognitive dysfunction and constipation can be problematic. For these patients, prescription sedatives with fewer side effects are more appropriate. If OTC sedatives are selected, utilize the lowest effective dose. Have patients return within two weeks for assessment.

Prescription sedatives are appropriate when insomnia is not expected to be resolved quickly. The newest agents are the short-acting, non-benzodiazepine, GABA-receptor agonists that include zolpidem, eszoplicone and zaleplon. These agents improve sleep latency and maintenance with minimal daytime somnolence. The main differences lie in their duration and focus on latency or maintenance. These agents are generally well-tolerated; however, reports of "sleep-driving" and amnestic sleep-related eating emphasize the need to take these medications properly.

Regardless of the sedative used, instruct patients to take the prescribed dose at the proper time and dedicate seven to eight hours for sleep. Common side effects can include drowsiness, headache and dizziness. Patients should perform tasks cautiously the next day. Prohibit alcohol use while on sedative therapy. Used together, sleep hygiene and sedatives can help patients improve their sleep and maintain their cardiovascular health.

Newsworthy

Mercy heart programs earn gold seal from JCAHO

Mercy Heart Institute's CHAMP® and Heart Smart programs have received Gold Seal of Approval™ certification for disease-specific care from JCAHO. This is a significant designation as there are *fewer than 20* healthcare organizations nationally with these disease-specific distinctions. CHAMP® (Congestive Heart Active Management Program) and Heart Smart (lipid reduction program) have been a key part of Mercy's outpatient cardiac services since the late 1990s. Recent data shows there are more than 1,500 patients enrolled in the two cardiac disease management programs.

State results for heart bypass surgery place MGH at top

Mercy General Hospital has been recognized by the Office of Statewide Health Planning and Development as:

- Number one in California based on the number of heart surgeries performed annually (1,253)
- Having the best outcomes for any major heart program treating more than 525 heart bypass patients

OSHPD released the data in March in the *Coronary Artery Bypass Graft Surgery in California, 2003 Hospital Data Report*. The OSHPD report notes that Mercy General has the largest volume of total CABG surgeries (both isolated and non-isolated) in the state.

Referral resources

The following Mercy programs are available for physicians to refer their patients for help managing heart disease.

Heart Smart and CHAMP®
(916) 564-2880

Anticoagulation Clinic
(916) 733-5350

Cardiac Conditioning:
Mercy General Hospital
(916) 453-4521

Mercy San Juan Hospital
(916) 537-5296

Smoking Cessation
(916) 453-4927

Mercy Mall Walk Program
(916) 564-2880

ICD Support Group
(916) 733-6966

Mended Hearts Support Group
(916) 773-5263

Mercy Heart Institute
1-877-9HEART9
www.CHWhealth.org/
MercyHeart

Mark Your Calendar

16th Annual Cardiology Symposium 2006: Concepts & Controversies

Scott Baron, MD and Richard Kaplon, MD
October 20–21, 2006
Hyatt Regency Sacramento
Call (916) 733-6966 for information

Nursing Education

Mercy Heart Institute

Cardiovascular Surgery Update #1
Sept. 11, 2006; 4 contact hours

Cardiovascular Surgery Update #2
May 23 or Sept. 18, 2006; 4 contact hours

Cardiac Interventional Class
Nov. 20, 2006; 4 contact hours

All classes are held at Mercy General Hospital.
Call (916) 733-6330 to register.

American Heart Association Heart Walk
Sept. 23
William Land Park

Cardiovascular Nursing Update

More than 130 people attended Mercy Heart Institute's Cardiovascular Nursing Update on April 20 at Eskaton in Carmichael. From left are: Joyce Higley, Manager, Mercy Heart Institute; Gearoid O'Neill, MD, Medical Director of Electrophysiology at Mercy General Hospital; and Susan Croopnick, RN, Stroke Nurse Specialist, Mercy San Juan Medical Center.

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