As was discussed in the last edition of the MACVPR President’s Update, we are living in a time of considerable uncertainty concerning health care finance reform. Everyone knows that change is coming, but we just don’t know when or how that change might affect us. One of my favorite quotes has been this from Mahatma Ghandi, “Be the change you want to see in the world.” In that spirit, I want to use this President’s Update to focus on two reimbursement issues where opportunities exist to effect POSITIVE change for our industry; Senate Bill 328 and a the potential addition of CHF to indications for Phase 2 CR.

Senate Bill 382 is the “technical correction” CMS has told us is required to allow non-physician providers (NPP) to provide daily supervision of CR and PR programs. This change would make it easier and less costly for programs to meet the regulation regarding supervision, while having no impact on patient safety or quality of care. In MA, our crack team of Wayne Reynolds and Kate Traynor has already secured Sen. Elizabeth Warren as a co-sponsor of this important legislation. An opportunity “to be the change” will present itself after the special election to fill Sen. John Kerry’s seat on 25 June 2013. Once the name of the newest MA Senator is known, Wayne, Kate and the MACVPR lobbying team will swing into action once again to secure the newest Senator as a co-sponsor as well. The goal is 51 US senators co-sponsoring S. 382 when it is attached to a larger piece of legislation later this year. Watch your email inbox carefully for next steps.

The other opportunity to effect some positive change within our industry lies in the recent announcement by CMS that they are seeking public comments on the “health benefit outcomes, both short and long term, provided by this service to Medicare beneficiaries with the diagnosis of CHF”. This is a first step in expanding the indications for Phase 2 CR to include the diagnosis of CHF. I urge everyone to ask their Medical Director of CR to send their comments to CMS at the following website:


The public comment period ends 04 July 2013, so time is of the essence. On that same website, you can view the letter that AACVPR, ACC, AHA and HFSA submitted to CMS. It is important that any comments submitted to CMS on this issue be consistent with what is submitted by the above groups.

If you have any questions on any of the issues in this update, please feel free to contact Kate Traynor, Wayne Reynolds through the AACVPR MAC web page, or Robert Berry through the MACVPR web site.

Robert Berry MS RCEP FAACVPR
Dennis O’Brien, BS, RN

president@macvpr.org
Happy Spring/Summer to Everyone! Hopefully we can all find time to savor some well deserved rest and relaxation over the summer months. I am happy to say we have another informative edition of MACVPR NEWS. Many thanks to all that have contributed.

We have an excellent article written by Julia Elliot RD, LDN from Emerson Hospital on the upcoming pages that is a summary article of a week long nutrition intensive course at Kripalu Center for Yoga and Health.

Deborah Sullivan MS, ANP-BC has continued with a great new feature “The Beat Goes On...EKG Challenge” in which she discusses an interesting finding on a rhythm strip and presents it as a brief case study.

Deirdre Proudman, MSN,RN-BC,CCRN has contributed an excellent article for the Tales from The Trenches column regarding medication reconciliation, and includes some practical information for your programs and your patients.

Pam Ressler has written a helpful article on resilience for the professional caregiver, in light of the recent Boston Marathon bombings.

Once again I encourage everyone to use the MACVPR website including the forum which is much more user friendly and a great way to share information with other members, and get your questions answered by others in your field. Hopefully more people will begin to utilize this great resource.

Please feel free to e-mail me and share your ideas. I am always interested in your thoughts to improve the newsletter.

Lynne MacDonald, PT
Beth Israel Deaconess Hospital-Milton Cardiac Rehab
Newsletter Editor: newslettereditor@macvpr

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Despite a snowstorm in Washington DC on March 7, 2013 AACVPR was represented by some of our peers in the Senate & House of Representatives for AACVPR’s “Day on the Hill”. Their goal was to seek legislative action to improve our ability to provide cost effective, safe cardiac & pulmonary rehab programs for our patients. A technical correction is needed to the bill passed in 2008. We now need legislative action to amend the original bill to allow nurse practitioners, physician assistants & clinical nurse specialists to supervise cardiac, intensive cardiac & pulmonary rehab programs. In 2011, members of the Senate Finance Committee sent a letter to CMS explaining that the intent of the legislation was not to create a roadblock to these programs, but to enhance access to these important services. CMS’ response was that due to the statutory definition of physician, Congress needs to revise terminology in the statute before CMS can allow NPPs to provide such supervision for CR and PR. (This is totally unrelated to the medical director physician role in CR and PR programs.) Several senators have already signed on to co-sponsor the bill, S.382. AACVPR is requesting that letters be sent to our state senators. When our Senate election occurs in June, we will be urging membership to send letters of support.

Note that CMS is changing how hospital billing offices will determine eligibility status for Medicare coverage of services. Currently the CMS Common Working File (CWF) is where an institution finds the number of pulmonary rehab (PR) sessions left or cardiac rehab (CR) sessions used to date by a Medicare beneficiary since January 1, 2010, the date when session counting began. Hospitals have been instructed to immediately begin transitioning to the HIPAA Eligibility Transaction System (HETS). Access to CWF eligibility has been terminated in some systems and a change request will be issued later this year to terminate queries effective April 2014. You will need to discuss with your billing/business office how CR and PR session utilization status will be obtained going forward. Your hospital’s billing office received this information in the MLN Matters Number SE1249 Revision issued on April 23, 2013.

Esther Burchinal, MS, CES, RCEP
Emerson Hospital Cardiac Rehab
Judy Flannery, RN, BSN
Harrington Hospital Cardiac Rehab
Immediate Past Co-Presidents: www.macvpr.org
There are many different schools of thought on what is a healthy diet. This is a summary of information gathered from the Nutrition Intensive For Health Professional course at Kripalu Center for Yoga and Health. Low fat or low carbohydrate which one is healthier? Heart healthy diets have been focused mostly on fats and cholesterol and not enough on types of fat, refined grains, wheat, sweeteners, and how our animal products impacts the quality of the protein. Studies have linked insulin resistance and leptin resistance (from high refined carbohydrate diets) to cardiovascular disease much more strongly than cholesterol. Research is also starting to look more at how our ancestors (100 plus years ago) ate compared to how we are currently eating and the health implications. Our ancestors over 100 years ago consumed less grains, wheat, sweeteners, animal protein and vegetable oils versus the current diet which is very high in refined carbohydrates, vegetable oils, and protein (table 1).

**Carbohydrates:**
The glycemic index has been the guideline for figuring out how carbohydrate foods impact blood sugars and insulin. A newer way of looking at the quality of carbohydrates is called carbohydrate density (table 2). Carbohydrate density is the percent of carbohydrate in the food per weight of the food. The more carbohydrates are packed into a gram of food, the higher the carbohydrate density. The guideline is to eat foods that are 23% or less carbohydrate dense. Carbohydrate dense foods are all sugar/sweeteners and grains/wheat. Consuming these foods has been linked to leptin resistance, increased levels of insulin and blood sugars and inflammation in the gut and throughout the body. The foods with low carbohydrate density are starchy vegetables and sprouted grains. These low carbohydrate dense starches are nutrient dense and have less impact on insulin and leptin. Our ancestors consumed only low carbohydrate dense foods.

Gluten is a protein found in wheat, barley and rye that gives elasticity to the dough in processing. Gluten was introduced with farming/ agriculture but has been more and more processed over the years. Gluten has been found to be less compatible to our intestine causing an inflammatory response in our gut and body and has been connected with many diseases and disorders (gastrointestinal, autoimmune, behavioral, neurological disorders, obesity and diabetes). A large percentage of people are gluten intolerant or have celiac disease but 60% of tests come back false negative.

Sweeteners provide no nutritional value to our bodies, just empty calories. The whole body is compromised when blood sugars levels are high from consuming sweets and even grains or wheat. A newer debate is sugar versus high fructose corn syrup. Sugar has been replaced with high fructose corn syrup in sweetened food products and drinks in turn making the intake of high fructose corn syrup very high. When high fructose corn syrup is consumed, the liver tries to get the fructose out turning it into fat. Fructose favors visceral fat. The incidence of non alcoholic fatty liver disease has increased with the high intake of high fructose corn syrup.

**Carbohydrates okay to eat:**
Millet    Buckwheat
Brown rice  Quinoa
Sweet potato/potato  Squash
Peas    Corn
Parsnips/turnips

**Limit:**
Any wheat product
All sweeteners especially high fructose corn syrup
White rice

**Oils:**
Oils naturally contain phospholipids, antioxidants, vitamins and minerals that healthy for the body. A lot of oils though have been processed with heat which removes most of these healthy nutrients. Heating oil above 300 degrees also starts the process of causing fatty acids to become mutagenic and toxic on the body. Some of the oils are partially hydrogenated, a process which involves adding hydrogen to the oil. This process turns the oil into a Tran’s fat (solid at room temperature). “White” or clear oils have been bleached which remove the beta-carotene and essential oils. Processed oils are a contributing factor to heart disease, chronic inflammation, dementia, nervous system problems and diabetes. Unrefined oils are left in their virgin state (not heated) after pressing. Unrefined oils are richer in nutrients (such as antioxidant-rich polyphenols). The drawback to unrefined oils is they have a lower smoke/heat point than refined oils. Refined oils can tolerate a much higher heat on the stove. Coconut oil is a medium chain saturated fat which has a higher resistance to heat and breaking down. Coconut oil is a good alternative for higher heat cooking.

The American diet is getting excessive amounts of omega 6 (10 times the recommended amount) and not enough Omega 3. Omega 6 fats are essential fatty acids that cause inflammation in the body. Omega 6 fats are found in vegetables oils (corn, sun flower and soybean oil) and the vegetable oils are used in a lot of processed foods (bread, cookies, crackers, chips, snacks, baked goods). Omega 3 fats are also essential fatty acids that prevent inflammation. Omega 3 fats are found in fatty fish. The excessive intake of Omega 6 and not enough Omega 3s in the diet causes the body to be in an inflamed state and more susceptible to illness.
Healthy fats to choose:
- Unrefined olive oil (Omega 9/monounsaturated fat)
- Unrefined coconut oil (medium chain saturated fat)
- Unrefined avocado oil/avocado (monounsaturated fat)
- Unrefined walnut oil/walnuts (monounsaturated fat/omega 3)
- Fatty fish (omega 3)

Animal protein:
The body should be at a pH of 7.35-7.45. Excessive animal protein intake will impact the pH balance of the body making it more acidic. When the body is more acidic, the bones and kidneys release more calcium to make the body more alkaline. An acidic body is prone to illness, inflammation, and toxicity. Typical American diet is high in animal protein.
The way an animal was raised and processed will significantly impact the nutritional value of the protein ingested. Xenohormones are pollutants that have hormone-like and estrogen-like activities. Exposure to the xenohormones can have a profound impact on our body’s natural hormonal balance. Xenohormone exposure comes from consumption of feed lot meats and dairy products. Animals are also given corn, which is not natural to their diet, to fatten them up. The animals in turn get sick requiring antibiotics. The hormones and antibiotics are ingested into our bodies.
Healthy animal protein to eat:
- Wild (not farm raised) Fatty fish
- Wild seafood/shellfish
- Grass fed organic meat
- Free range organic chicken and eggs

So what should we eat? With all the mixed messages telling us how to eat, we are left not knowing what to put on our plate. What should our diet look like? What should our plate look like? We are not cutting out fat or starch or protein but choosing healthy good quality options and reducing our total intake. We are also focusing on balancing our diet. Each meal should ideally be balanced with mostly fresh or frozen vegetables and or fruit, smaller portion of good quality protein (organic animal protein or plant protein), smaller portion of starch coming from starchy vegetables or whole grain (quinoa, millet, brown rice, buckwheat) and healthy fats. See table 3 for a visual of a balanced plate.

A few examples of what a balanced day would look like.
**Breakfast:**
- Egg whites and sautéed greens
- Quinoa hot cereal with berries and nuts

**Dinner:**
- Fish, broccoli and sweet potato
- Shrimp and veggie stir fry with brown rice

**Lunch:**
- Salad with beans and corn
- Vegetable and bean soup

**Snacks:**
- Fruit and nuts
- cut up veggies and hummus

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**U.S. FOOD CONSUMPTION AS A % OF CALORIES**

**PLANT FOOD:**
Vegetables, Fruits, Legumes, Nuts & Seeds, Whole Grains

**ANIMAL FOOD:**
Meat, Dairy, Eggs, Fish, Seafood

**Fiber** is only found in plant foods.

**NOTE:** Up to half of this category may be processed, for example almonds in candy bars, apples in apple pies or spinach in frozen spinach soufflés, and of course these would not be healthy choices. The focus should be on unprocessed vegetables, fruits, legumes, nuts and seeds and whole grains.

**PROCESSED FOOD:**
Added Fats & Oils, Sugars, Refined Grains

**GUIDE TO HEALTHY EATING:**
Much easier to understand than the USDA Food Pyramid, with no food industry influence.

Eat LESS from the animal and processed food groups and MORE whole foods from the plant food group.

In general, food from the animal and processed food group contribute to disease, while WHOLE foods from the plant group contribute to good health.

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Special thanks to Joel Fuhrman, M.D. author of Disease-Proof Your Child: Feeding Kids Right. Graphics by MichelleBands.com © 2009, New York Coalition for Healthy School Food
Table 3

Julia Elliott RD LDN

**Resources:**
Nutrition Intensive for Health Professionals
**Kripalu Center for Yoga and Health**
This immersion course offers training focused on the science and art of nutrition, integrative whole-foods approaches to therapeutic nutrition and evidenced-based nutrition assessment and therapies based on whole-systems medicine.
- John Bagnulo PhD
- Katherine Madonna Swift MS, RD LDN

*Editors Note:* For those of you unfamiliar, according to their website, Kripalu is a non-profit educational organization dedicated to empowering people and communities to realize their full potential through yoga. For over 30 years Kripalu has been teaching skills for optimal living through education for the whole person: mind, body, spirit. Kripalu is located in Sturbridge, MA.

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**AACVPR Updates**

Wednesday, June 19, 2013  AACVPR Outpatient Pulmonary Rehabilitation Registry Launch
Chris Garvey, FNP, MSN, MPA, FAACVPR, Seton Medical Center, Together with Registry Developer Cissec Corporation Pumonary Rehab & Medicine, Program Management

The AACVPR EducationAdvantage Membership includes up to 10 live AACVPR Webcasts over the course of the membership year, as well as all the other benefits of the professional AACVPR membership. Receive up to $650 worth of education and earn up to 10 AACVPR or nursing continuing education credits for one low membership fee. (See AACVPR website for more information)

EducationAdvantage Membership Fee: $249
Greetings MACVPR Members,

We currently have 103 members including 3 students. Programs appear to be active at this time. My cardiac rehab program on Cape Cod has the most participants we have had since 1987. We have people driving an hour to the program 3 days per week.

Recently an MACVPR member was retiring after 22 years in Cardiac Rehab. She sent a lovely note stating how she had enjoyed her work with people living with heart disease and learning how to stay healthy. She raved how MACVPR helped her grow professionally as well as having the ability to network with other members. She also enjoyed serving on the MACVPR Board.

Encourage your colleagues to join MACVPR, get involved and stay active. Whether you just pay dues and receive the benefits and services, or you are an active leader and contributor to the organization, there is no doubt getting involved will help you in the long run.

See you all at the Fall Symposium
Melessa Fox, RN, BSN Falmouth Hospital
Membership Chair

Welcome New Members
Janice Paulsen RT,(r),(mr) ,RN Lowell General Hospital

Membership News

Treasurer’s Report

Welcome Donna Hawk as our new Treasurer!

MACVPR Forum Update

Currently we have posts on these topics:

- Does anyone use separate consent forms for PR maintenance?
- Are annual staff competencies needed for CR?
- Are they any programs that do an individual session as the first session in CR?
- I am the only RN in my program. How do others handle sick time, vacation?
- Looking for suggestions for post program outcomes? Does anyone call pts? Mail outcome tools?

Everyone reading this newsletter should take a moment soon and sign on and see if they can offer any advice/answers to the posts. The more people that contribute, the more vibrant our forum will be. It is great to hear what many different programs are doing, not just from the same few people who are good enough to check in on the Forum. Try to make it a habit to check out the Forum at least once a week. A feature that you may not have noticed is the ability to watch or subscribe to the topic. If you subscribe to the topic when a new post is posted you are automatically sent an email alerting you to go to the forum to read the new post. So easy to track! This is a great but underutilized resource...so please start to take advantage of it. Sharing our thoughts and experiences with one another helps all of our programs improve the care we provide to our patients.

Current balances as of June 10, 2013:

Citizen’s Bank checking: $10,064.24
Citizen’s Bank Money Market fund $2,632.38
Total $12,696.62
May Half Day Meeting Update

The May half day meeting held at Metro West Medical Center Medical Arts Building in Framingham opened with a warm welcome from our co presidents Robert Berry, MS, RCEP, FAACVPR and Dennis O’Brien, BS, RN. The opening address highlighted a “no experience necessary” invitation to become actively involved in MACVPR.

Ginny Dow RN, BSN, BC, and Julia Elliot RD, LDN from Emerson Hospital’s Cardiac Rehab and Prevention Department presented an informative program on How to Start a Metabolic Syndrome. This presentation illustrated their own program and the opportunity provided by MACVPR membership with its example of sharing innovative ideas and practices with colleagues and successful approaches to patient care.

Kathleen LaFerriere, BSN, RN, CCRN presented Diabetes and Heart Disease: What's the Connection? Kathy’s knowledge of the topic was evident, and she provided a dynamic review of the pathophysiology of arteriosclerosis with diabetes and its consequences of insulin resistance on the endothelial wall. Treatment for both Metabolic Syndrome and Diabetes is aggressive modification of associated risk factors and is supported by evidence from the AHA and ADA for weight loss, dietary modifications, exercise, blood pressure, lipid, glucose control, smoking cessation, and aspirin therapy.

The opportunity for networking was provided by two half hour breaks. Twenty seven members discussed issues, expertise, and shared ideas in a free forum. Evaluations were electronic and sent via email utilizing survey monkey. There was a united response that all speakers were knowledgeable and well spoken and topics were interesting and pertinent. Suggestions for further programs included:

- building resilience in times of crisis for your community, colleagues, and yourself (in light of the Boston marathon tragedy, hurricane Sandy, etc-address the emotional recovery of our community, identify resources, restoring hope)
- resistance training
- coding
- updates on cardiac and/or pulmonary diagnostic or clinical procedures/tests/interventions
- resistance training specifically how we should guide patients who prior to their cardiac event were doing significant weight lifting
- more on right and left sided heart failure
- high intensity interval exercise and strength training in cardiac and pulmonary rehab
- outcomes
- minimally invasive CABG and valve surgeries
- conferences or on-line education re: basics of rehab of cardio-pulmonary patients for PTs, exercise physiologists, nurse, etc. to expand the pool of interested professionals and generate revenue for the organization.

The benefit of being an MACVPR member was clearly evident in this half day program. Consider Robert’s invitation to become more involved! Thank you to all for making our May 14th meeting a success.

Deirdre Proudman MSN, RN-C, CCRN Education Committee Co-chair

Education Committee

Our education committee is busy planning the 2013 New England Cardiovascular and Pulmonary Rehabilitation Symposium to be held Thursday October 24, 2013 at Devens Common Center, Devens, MA.

Speakers to date include Damian Folch MD presenting Exercise as Medicine and Dr. Michael Chuang presenting an overview/history of the Framingham Heart Study and the contributions to the epidemiology of the clinical prediction of Heart Failure.

Please send any ideas for educational topics or speakers to education co-chairs Ginny Dow or Deirdre Proudman. We welcome any members with program planning.

Education Committee Co Chairs
Ginny Dow RN, BSN, BC
Deirdre Proudman RN-C, MSN, CCRN
As we continue to heal from the Boston Marathon Bombings, let’s remember that to effectively care for others we need to prioritize care for ourselves, so we may continue to be able to "Keep Calm and Carry On" under pressure. Studies have demonstrated that those caregivers who take time to tend to their own emotions and healing after a traumatic event are less likely to suffer from secondary traumatic stress leading to compassion fatigue.

Compassion fatigue is an occupational hazard for those in the caregiving professions who are constantly confronted with the suffering and trauma of others. What we see and experience in our jobs has a profound effect on our ability to cope with our own emotions and over time can lead to feelings of hopelessness, anger, disengagement, isolation and burnout. Prevention of compassion fatigue begins with an awareness that self-care is a priority. Self-care is especially important after a particularly charged or catastrophic event, but also essential as an ongoing strategy for sustainable caregiving. Current research suggests that proactive use of techniques such as mindfulness may reduce the effects of secondary traumatic stress and compassion fatigue. Integrating small mindfulness activities throughout your workday is one way to be sure you are giving yourself some necessary self-care amidst the busyness of your day. Try to include at least one activity from the list below each day and as you become more consistent in your practice, increase to include more activities on a daily basis.

1. Allow yourself to be mindful of your morning rituals – try to shift from "multi-tasking" to "mono-tasking" for a few minutes each morning. Concentrate only on the activity you are currently engaged in with all of your senses.
2. Consciously release and relax your shoulders and neck by gentle stretching before you leave the house in the morning.
3. Use red lights and stop signs as reminders to loosen your grip on the steering wheel and slow your breathing down. Allow your breath to settle in the belly, expanding the belly like a balloon on the inhale and allowing it to deflate on the exhale.
4. When you arrive at work, take a few moments to notice the environment -- what is the temperature of the air as you walk into the office building, is it sunny or cloudy? Allow yourself to notice your breathing.
5. Practice gentle mindful stretches of your shoulders and neck when you are sitting to release muscle tension in the large muscle groups of the body and promote increased concentration and focus throughout the day.
6. Before a potentially charged or stress-provoking event, choose to S.T.O.P. (S-stop; T-take a breath; O-observe your mind and body; P-proceed with your day). Become aware of your breathing, allow your mind to settle and regroup. By proactively eliciting this relaxation technique, you avoid or minimize the typical physical manifestations of a stress reaction.
7. Use everyday cues in your work environment as reminders to "center" yourself (e.g. opening an e-mail message, answering the phone, washing your hands, entering a patient care area)
8. At the end of the workday, try retracing today’s activities, acknowledging and congratulating yourself for what you have accomplished. You’ve done enough for today.
9. Pay attention to your walk to your car or other transportation. Practice mindfulness by noticing the environment, the air, any sounds, and concentrate on your breath. Spend a few moments in your car before you begin your commute home to deepen your breathing, and release any neck or shoulder tension. Take a moment to simply “BE”. Like most of us, you are heading to your next full-time job…home.
10. When you arrive home, change out of work clothes. This simple act helps you make a smoother transition into your next role. If possible, make time to be by yourself for 5-10 minutes to be quiet and still.

As always, I love to hear comment and feedback from readers. What topics of mind/body/spirit would you be interested in exploring in future columns? Let me know at pressler@StressResources.com
Mr. X is a 67 year old who was recently admitted to your program status post MI and drug eluting stent (DES) 5 weeks ago. He has a history of coronary artery disease (CAD) which dates back about 20 years and includes a prior CABG. His history is also significant for hypertension, hyperlipidemia, and diabetes. His body mass index (BMI) is 33 and he is a former smoker. He has been limiting his activity at home as advised and is anxious to start your cardiac rehabilitation program.

On arrival today he has no complaints of chest discomfort but does experience shortness of breath especially when he has to use the stairs. His blood pressure (110/70) and glucose level are within normal limits and he has taken his medications as prescribed.

![Baseline ECG](image1.png)

Rate and regularity:
- P wave morphology:
- PR interval:
- QRS-complex morphology:
- ST-segment morphology:
- T-wave morphology:
- U-wave morphology:
- QT/QTc interval:
- Rhythm:

After reviewing his baseline rhythm strip (leads II and III) you determine that he is stable and begin his exercise session. Twelve minutes into his exercise session he decides to push himself and increased his treadmill speed and elevation to 3 MPH and 3% grade. Just prior to this increase in workload his blood pressure increased to 170/78, HR was 80 beats per minute (bpm). He appeared comfortable but when questioned did admit to 3 out of 10 midsternal chest heaviness/discomfort.

His monitor pattern has changed (see tracing below), what is your next action:

![Exercise ECG](image2.png)

A. Continue with his exercise session as this represents a rate related left bundle branch block.
B. Stop his exercise and prepare the patient for an immediate cardioversion because he is in atrial flutter with a 2:1 block.
C. Stop his exercise and follow your programs protocol for the management of angina symptoms.
D. Stop his exercise and call the MET team or transport the patient immediately to the emergency department if the MET team is unavailable in your institution.

![Recovery ECG](image3.png)
The Beat Goes On....EKG Challenge

After stopping his activity the patient’s ECG tracing returns to baseline, his symptoms resolve and quick review of his recent stress echocardiogram revealed a small reversible perfusion defect in the apical wall. Your plan is to revise his exercise prescription, provide education and counseling as well as send him for a follow up visit with his cardiologist.

His current medications include amlodipine, baby aspirin, atorvastatin, brilinta (ticagrelor), isosorbide mononitrate, lisinopril, metformin, and metoprolol. You can expect the patient to return with the following medications changes because he is not a candidate for any additional procedures at this time: (There may be more than one answer).

A. Aspirin increased to 325 mg.
B. Sublingual nitroglycerin 0.4 mg PRN as directed which may be used prior to exercise.
C. Increase in metoprolol dose.
D. Ranexa (ranolizine) 500 mg twice daily.
E. Discontinue metformin to avoid hypoglycemia which may have precipitated the ECG changes.

Please go to page 13 for answers

Pharmacy Update

NEW ANTIPLATELET DRUGS OFFER NEW BENEFITS

By Scott MacDonald RPh * Emerson Hospital

The original drug of choice for antiplatelet action for patients with ACS or PCI stent placement has been Plavix (Clopidogrel) which was introduced in 1997. It’s proven to be a safe and effective medication for preventing atherosclerosis in patients following MI or stroke.

Despite the proven benefits of Plavix, some shortcomings to the drug do exist as does the need for newer agents.

One of the primary shortcomings of Plavix is the fact that some patients don’t respond to the drug. This is because Plavix is what’s known as a pro-drug, an inactive form of drug that must be converted by enzymes in our bodies to the active form. Some patients lack this enzyme and therefore don’t respond adequately to the drug and are known as Plavix-resistant and are at risk of clotting. There is genetic testing to determine if you will respond to Plavix.

Another problem with Plavix is that it may interact with other drugs like the proton pump inhibitors (Nexium, Prilosec) and make Plavix less effective. Generally you should avoid these drugs unless your doctor prescribes them.

EFFIENT (Prasugrel)

Effient is a more potent antiplatelet drug than Plavix. One advantage of Effient is that its not as highly affected by the enzymes needed to activate it like Plavix so more patients respond to it and at lower doses. There can be a slightly higher risk of bleeding in the elderly with Effient so the physician has to balance the risk vs. the benefit and its usually reserved for non-responders to Plavix.

BRILINTA (Ticagrelor)

Brilinta is another new antiplatelet drug approved for use in Acute Coronary Syndrome or after PCI. It too works by preventing the formation of new blood clots and maintain the bodies blood flow. It is not a pro-drug and therefore not dependent on enzyme activation. Its use is generally reserved for non-responders to Plavix. Another advantage with Brilinta is that it is not excreted by the kidneys so it can be used in patients with decreased kidney function. One disadvantage may be that insurance companies may charge a higher co-pay with Brilinta than with Plavix although that could change with time.
Medication reconciliation in cardiac rehabilitation has always been a part of the initial assessment and ongoing treatment plan as well as a component of the discharge process. It continues to increase in popularity as a core component of providing quality care. At LGH, medication reconciliation (MR) was identified as an opportunity to track and assess the patient’s ability to make changes in life style, and in overall management and self-efficacy under the behavioral domain as an outcome measure. Our measurement was medication adherence/compliance as collection by history.

Initially, upon entering cardiac rehabilitation (CR), patients were asked to bring a current list of their medications with them for their initial evaluation. Patients were educated on the importance of carrying an updated medication list. At the end of CR, patients were asked if they had a current medication list with them to verify any changes or updates to their medications without prior notification the list was needed. Analysis revealed that educational reinforcement during CR had no significant impact on medication reconciliation among patients participating in CR. A limiting factor found was the standardization of education reinforcement among staff in CR.

As defined by the JCAHO, medication reconciliation by history is the process of identifying the most accurate list of all medications that the patient is taking, including name, dosage, frequency, and route. This process should include a comparison of the existing and previous medication regimens and should occur at every transition of care in which new medications are ordered, existing orders are rewritten or adjusted, or if the patient has added nonprescription medications to his/her self-care. The process compares the medical record to an external list of medications obtained from a patient and is done to avoid medication errors such as omissions, duplications, dosing errors, or drug interactions during a relevant encounter or transition of care from one setting of care to another, as well as to observe compliance and adherence patterns.

An improvement to the program based on review of the behavior selected, was a revised Phase II of medication reconciliation including not only patient adherence but staff actions. We continue to utilize self report at the initial intake assessment compared with the medication profile from the patient last care setting, updates from MD appointments during program participation, each cardiac rehabilitation encounter, and history at discharge from program through:

- Verification: (collection of the medication history) the patient develops a list of current medications including those taken at scheduled times and as needed.
- Clarification: The RN obtains and compares a printed list from the last setting of care and ensures all medications and doses are appropriate. Staff will assist in the creation of a wallet sized list.
- Reconciliation: The medication list is documented in the EMR with any changes. It is reassessed at each encounter and at discharge.

How many referrals have you had that include the discharge summary from Boston with a discharge medication list, the cardiology follow-up visit medications list, and the patients medication list as to how and what they are actually taking and they all match! Specific examples of discrepancies include the discovery of OTC medications and complementary and alternative medications, duplications of generic and brand name medications, doubling of medication doses with generic and brand name drugs, and deletions by patients due to cost or copay with resulting pharmacy/generic med/financial assistance. Medication reconciliation/adherence provides the opportunity to engage the patient as a participant in their care in addition to participation in the program and optimize their outcomes in cardiac rehabilitation. We all have the opportunity to teach the patient why they are on their meds and what they mean to their own continued health.

One of my favorite encounters was with “Millie” who had an anterior MI and congestive heart failure. Although it was recorded on her reconciled medication list, she discontinued her Lasix on her own as she was “allergic to it.” What happens when you take Lasix?” I asked her. “It makes me pee.” Millie was given heart failure instructions and a task list of daily weights, as well as instructions on when to call the MD, and to take her Lasix. I am sure she had heard this all before but needed to hear it again. She believed this instruction in self care kept her from being readmitted, as she was able to call the MD for problems and treat weight gain with extra Lasix, outpatient labs, and a follow up office visit.

The average STEMI/primary angioplasty patient leaves the hospital with a daily regimen of Plavix and aspirin, a beta blocker, an ace inhibitor, and a statin. Some are also prescribed spironolactone and Coumadin for post myocardial stunning and a low ejection fraction. Patients are also taking histamine -2 receptor agonists, may be diabetic, or take supplemental vitamins such as vitamin D. Many patients are entering CR not complying with medication therapy because of co pays. For those who are compliant, usually the first question is “How do I get off this medication?”

“Celine” entered cardiac rehabilitation s/p MI PCI with a bare metal stent. Initial assessment revealed she was not taking any of her medications, including Plavix and ASA. After a serious discussion regarding dual anti-platelet therapy and its role in decreasing the frequency of death and MI after stent placement particularly as stent thrombosis, a Plavix two week prescription card was immediately obtained for her through continuity of care. Her cardiologist provided her with additional samples for the duration of her Plavix therapy. She was covered by a BC/BS HMO plan with a pharmacy plan to which she was making significant COBRA payments as she was unable to work. Most of her prescribed medications were tier 2 or $35 dollar co pay per thirty day supply.

Wal-Mart has a retail prescription program which is available to everyone. Under the program at Wal-Mart retail pharmacies, $4 is the price for up to a 30-day supply of certain covered generic drugs at commonly prescribed doses (the “$4 Retail Program”), $10 is the price of a 90-day supply of certain covered generic drugs at commonly prescribed doses (the “$10 Retail Program”). http://i.walmartimages.com/i/if/hmp/fusion/customer_list.pdf

Celine’s medication list included Plavix, ECASA, Zestoretic, Lopressor, Simvastatin, Zantac, Metformin, and Fluoxetine. In collaboration with her cardiology office, her prescriptions were rewritten for Wal-Mart’s formulary. Because prescriptions must initially be filled in person, transportation was arranged. Replacing Zestoretic with a 30-day supply of Lisinopril-HCTZ 20mg-25 mg tab replaced a $35 dollar co pay with a $4 co pay. A 30-day supply of twice daily Metformin equated to a $4 co pay. Considering the complete list and doing the math, the end result was the ability to adhere to medication therapy. Cardiac rehabilitation offers this program to all patients, regardless of insurance or medication compliance, in addition to review of their own pharmacy program. Feedback includes the use of this program among family members, including elderly parents.
There is also the method of medication reconciliation by pulse check or monitored visit. As you are sitting at the monitor you notice a patient with a usual resting heart rate of 50 has a heart rate of 75. Heart rate response to exercise is excessive and blood pressure is higher than usual, and you ask: “Have you taken your meds today?”

For the patient who simply cannot pay the copays through their pharmacy plan but does not meet the income level for financial assistance, Wal-Mart again is an alternative to help defray the cost of medication adherence. Some of our patients are eligible for financial assistance through the Commonwealth of Massachusetts Mass Health and Health Safety Net. Eligible patients are directed to the Greater Lawrence Family Health Center for services without payment.

Medication reconciliation serves many purposes in cardiac rehabilitation in addition to being a behavioral outcome tracked for a component of program certification. It provides compliance with the Joint Commission’s National Patient Safety Goals, has become a department specific performance improvement initiative, Best Practice, and a Magnet Nurse Sensitive Quality Indicator. Cardiac rehabilitation is also an ideal setting to partner with the Hospital to Home (H2H) Institute of Healthcare Improvement, a quality improvement initiative developed by the American College of Cardiology (ACC) and the Institute of Healthcare Improvement to support the nationwide effort on reducing readmission rates for patients with HF and AMI. The Mind Your Meds Challenge Goal is that all patients discharged with a diagnosis of HF/AMI are optimally medically managed, which includes successful medication adherence, reconciliation, and improved health literacy.

Medication reconciliation by history is a process utilized to improve patient care and optimize therapeutic outcomes in care transitions including cardiac rehabilitation. It provides a formal opportunity to provide education on medications, assesses medication compliance and pharmacy plan, and provides safety across the continuum of care. It is a patient centered process focusing on patient safety and engages the patient as a team member in their healthcare through education, adherence, and active involvement in the accurate transfer of medication information.

The Beat Goes On....EKG Challenge

Answers:

1. When reviewing the rhythm strip the systematic approach reveals the following: Rate is approximately 54 bpm, the rhythm is regular; P waves are similar in size, shape and overall contour (the arrow in the resting strip is pointing to artifact); the PR interval is within the normal limits of 0.16-0.20; there is a QRS following every P wave which is within the normal limit of 0.08-0.10 in duration; ST segment in the resting strip is at the isoelectric line; T waves are upright; U waves are not visualized; QT interval is 0.42 and within a normal limit; the rhythm is sinus bradycardia.

2. Answer: C. The patient remains in a sinus rhythm at a rate of approximately 86 bpm. He developed 1-2 mm ST segment depression which is down sloping and reports symptoms. His symptoms resolve completely with rest and the best thing to do is to follow your programs protocol/policy for the management of angina.

3. Answer: B and D are correct. Sublingual nitroglycerin can be used prophylactically in some cases and Ranexa (ranolizine) is indicated for the treatment of chronic angina. Increase in the aspirin (A) is incorrect because the patient is on Brilinta (ticagrelor). Brilinta (ticagrelor) carries a specific warning regarding the appropriate maintenance dose of aspirin which is 70-100mg daily. The aspirin dose should be less than 100 mg because of the reduced effectiveness of brilinta with higher doses. An increase in his beta blocker, metoprolol, would further decrease his resting heart rate. The benefit of metformin, (E) also the wrong answer, is that it does not normally cause hypoglycemia additionally hypoglycemia is not known to cause ST segment depression.

Additional references:
http://www.ranexa.com/HCP/Default.aspx?clid=CMLSLnL1LcCFaYDOgodwW1AeQ
http://pcna.net/clinical-tools/tools-for-healthcare-providers-cart/get-tough-on-angina
MEMBERSHIP APPLICATION

Or

Download application from www.macvpr.org

Name (with Credentials):

Mailing Address you want the card sent:
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Work #:

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Profession:

Institution:

☐ Cardiac  ☐ Pulmonary

☐ New or ☐ Renewing Membership

☐ $100 Two year membership (begins on the first day of the month joined and ends two years from that date)

☐ $25 for a One Year student membership
(Students must be enrolled in a minimal of 12 credits per quarter and provide copy of schedule with membership application.)

How did you learn about the MACVPR?

Are you currently a member of the American Association of Cardiovascular and Pulmonary Rehab (AACVPR)?

☐ Yes  ☐ No

If you do not want your email and/or mailing address shared with the AACVPR please check here ______

Mail check or money order to:
MACVPR  C/O Ann Stone
33 Oakwood Ave Falmouth, MA 02540

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