



# The Chartwell Educator

## Continuing Education (CE) Updates

### Newsletter Credit Available- CE Credit available for nurses and dietitians

- Complete the Participant Data Form
- Complete Pre and Post-test
- Complete Evaluation
- E-mail to [khammond@chartwelldsi.com](mailto:khammond@chartwelldsi.com)

It is a new year and the Continuing Education Committee has many new and exciting activities planned. The new web-based educational activities are successful and we will be adding more programs as time goes on. If you have not checked them out, go to our Chartwell website at <http://www.chartwelldsi.com> and try them out.

We will also be placing this newsletter on the site as well. This newsletter carries one hour continuing education credit for nurses and dietitians.

The 2007 CE Manual has been sent to all center Nursing Managers. The manual can also be found on the company ftp site for reference as well.

Members of the 2007 CE Committee are Bernie McDonald,

Marlee Moore, Julie Slattery, Ginger Buckley, Sally Vogt, Debbie Rendon, Julie Murphy, Tina Logan, and Nettie Karosi.

If you are interested in joining the CE Committee, please let Kathy Hammond know at [khammond@chartwelldsi.com](mailto:khammond@chartwelldsi.com)

### Nutrition Updates

Updated Nutrition Support materials are now available from the American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.):

- ◆ The new Nutrition Support Practice Manual
- ◆ Nutrition Support Core Curriculum and the
- ◆ New web-based self-assessment program.

To learn more go to [www.nutritioncare.org](http://www.nutritioncare.org)

Beginning in 2008, the National Board of Nutrition Support Certification (NBNSC) will be changing its certification exam designation. Instead of nurses, dietitians, and physicians taking a discipline specific exam, one exam and one credential will be implemented. The new credential will be Certified Nutrition Support Clinician (CNSC). This credential certifies knowledgeable nutrition support professionals based on a common core of practice among all disciplines.

Pharmacists and physician assistants have expressed interest in the CNSC credential and is currently being considered by the Board.

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## IV Pentostam for the Treatment of Leishmaniasis

McDonald, RN / Chartwell Pennsylvania and Marlee Moore, RN / UC Davis

Leishmaniasis is disease caused by a parasite. It is spread by the bite of infected sand flies. The most common forms of this disease are cutaneous leishmaniasis which manifests itself as skin sores and visceral leishmaniasis which affects the spleen, liver, bone marrow or other internal organs.

The cutaneous type presents with one or more skin sores which can change in size and appearance. Often these

sores look like a "volcano" with a raised edge and central crater. The sores may be covered with a scab. Pain may or may not be present. Enlarged glands may be felt near sores (e.g. under the arm if the sore is present on the hand or arm).

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## IV Pentostam

On the other hand, visceral leishmaniasis presents with fever, weight loss, enlarged spleen and liver. Swollen glands may be present. The red and white blood cell count and platelet counts are low.

Leishmaniasis is found mostly in the tropics and subtropics, including areas in Mexico, Central and South America, southern Europe, Asia, the Middle East, and Africa. Let's take a look at a case study presented by Chartwell Pennsylvania:

*On October 27, 2006, C.B., a 25 year old female, presents to the Emergency Room (ER) with a non-healing left hand lesion with lymphangitis of the left arm. She states she was in her usual state of health until 9/7/06, two days upon returning from Costa Rica. While there, she spent three weeks in a hut and three weeks on the beach.*

*On the morning on arrival to the ER, she awoke with an erythematous papule on her left hand. The lesion persisted and enlarged since that time, despite treatment with Cephalexin, Augmentin, Bactrim, and Doxycycline. Multiple cultures were non-diagnostic. Numerous lab tests, histories, and physicals produced a diagnosis of cutaneous Leishmaniasis. Diagnosis was confirmed with biopsy of the lesion.*

Intravenous (IV) Pentostam, an anti-parasitic, was the treatment of choice for this patient. Since this disease is rarely found in the United States, Pentostam cannot be obtained by the usual suppliers. Pentostam is produced by GlaxoSmithKline in the United Kingdom and supplied by the Centers for Disease Control (CDC). The CDC recommends an IV daily dose of 20 mg/kg over 20 consecutive days. Except in circumstances of drug-related toxicity, drug-free rest periods are not recommended.

A peripherally inserted central catheter (PICC) was the catheter of choice since this drug is chemically phlebotic to peripheral veins. The first dose of Pentostam was given in the controlled setting of the hospital clinic. Drug information was shared with the patient and one major component of the information shared was that the patient is not expected to give self-injections.

A home nursing agency administered the daily dose of 1,136 mg of medication (based on 56.8 kg weight of patient).

The medication was infused via gravity drip over 30 minutes. The drug was reconstituted with 100 mL of D5W mixed in a class 100 clean room and delivered to the patient's home.

Clinical monitoring included care and observation of the PICC line site, observation for side effects including redness at the injection site, changes in heartbeat, nausea and vomiting, severe upper abdominal pain, weight loss, appetite loss, muscle and joint pain, chest pain, jaundice, dizziness, headache, and coughing immediately following the injection. Laboratory monitoring included a complete medical profile (CMP), complete blood count (CBC), lipase and amylase.

During the course of therapy, C.B. experienced some headaches and nausea after the infusions with minimal episodes of vomiting. She experienced a slight elevation in lipase, SGOT, and SGPT levels toward the end of treatment.

C.B. is presently recovering nicely with pain and edema subsiding.

Here is another case study from Chartwell UC Davis:

A family of three bought property in Costa Rico. In one of the coastal areas, they were exposed to a hatch of sand flies. When they returned home, they noticed lesions and open wounds on their skin. They went to several physicians before being diagnosed with cutaneous Leishmaniasis. They were treated and supervised by medical staff. The five year old child was admitted to the hospital with sepsis. The mother developed a full body rash but the father managed fairly well. They all completed therapy and are doing well.

People of any age are at risk for this infection. The risk for getting bitten is from dusk to dawn when sand flies are the most active. One bite is all it takes to get infected. If not treated, death can result.

Prevention of this disease is to protect against sand fly bites. Travelers should stay in well-screened or air-conditioned areas when possible and avoid outside activities from dusk to dawn when the sand flies are most active. While outside, long-sleeved pants and shirts should be worn with shirts tucked in the pants. Insect repellents that contain DEET are most effective on uncovered skin and under sleeves and pant legs.

Permethrin-containing insecticide can be used on clothing. Living and sleeping areas should be sprayed as well. Bed nets can also be used.

It is possible to get this disease more than once so preventive precautions are imperative if returning to an area known to be at risk.

Sources:

Centers for Disease Control. [Http://www.cdc.gov](http://www.cdc.gov)

GlaxoSmithKline.

### Once a Year Infusion for Osteoporosis?

Reclast (zoledronic acid) is an intravenous infusion for osteoporosis that was tested in 7,736 postmenopausal women with osteoporosis. The medication has been found to reduce the risk of new fractures by 70% and hip fractures by 40%. Fever, muscle pain, flu like symptoms, and bone pain are some of the adverse reactions associated with this medication.

Reclast is a 15-minute infusion given once a year for osteoporosis and may prevent fractures as well as other medications taken daily or weekly.

Currently there are 13,000 people taking part in clinical trials. The FDA is still awaiting results from Phase 3 trials before final approval is granted in the United States.

From Nursing 2006, 36(12), p. 32.



## Test Your Advanced Cardiac Life Support Skills (From Nursing 2006, p. 68-69)

1. Which drug should give initially to a patient in anaphylactic shock?

- A. hydrocortisone sodium succinate
- B. epinephrine
- C. diphenhydramine
- D. Cimetidine

2. The \_\_\_\_\_ scale is used to rapidly assess a trauma patient's neurological status.

3. A 72-year old patient is experiencing sudden onset of mental status changes, including slurred speech and vision changes. He should be immediately be evaluated for which of

the following conditions?

- A. anaphylaxis
- B. unstable angina
- C. stroke
- D. myocardial infarction

4. Which dysrhythmia can occur as a complication of such drugs as procainamide and quinidine?

- A. atrial tachycardia
- B. sinus bradycardia
- C. atrial fibrillation
- D. torsades de pointes

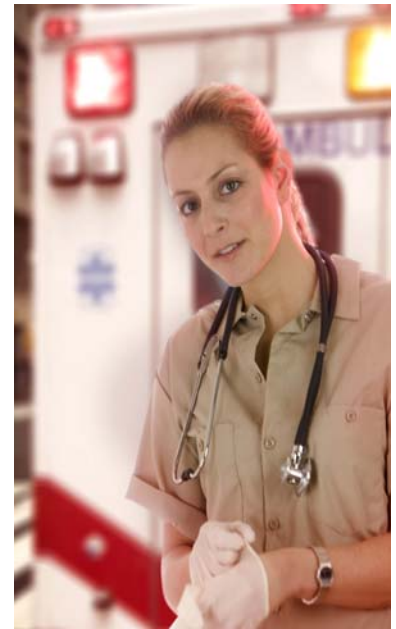
5. Properly performing ventilations with supplemental oxygen is the mainstay for restoring

acid-base balance during cardiac arrest. (True or False)

6. The drug of choice to treat a patient with acute ischemic stroke whose blood pressure is 240/130 is which of the following?

- A. labetalol
- B. nifedipine
- C. mannitol
- D. lorazepam

(Answers on page 4)



## Nutrition Assessment and the Role of Hepatic Transport Proteins /Kathy Hammond, MS, RN, RD, LD, CNSD

It seems that there is still confusion regarding the best way to monitor response to nutrition therapy, especially while the patient is receiving parenteral and enteral nutrition. Does it really matter? Well, yes, it does matter. Traditionally hepatic proteins have been used along with clinical parameters to monitor response and adjust the nutrition regimen. The concern with transport hepatic proteins has been the ability of these protein markers to accurately reflect nutritional status, especially in those who present in some state of stress or illness whether in the acute care or home setting.

Hepatic transport proteins refer to the structural components of the body and include serum albumin, pre-albumin (transthyretin), transferrin, retinol binding protein, C-reactive protein, fibronectin, and insulin-like growth factor I (IG-I) or somatomedin C. This article will discuss selective hepatic proteins. Contrary to

previously published data, these proteins do not indicate nutritional deprivation. Hence, they should not be the sole indicators of nutritional status and recovery. There is an indirect relationship between serum hepatic levels and nutritional status.

More specifically, serum albumin and pre-albumin are "negative" acute-phase reactants and drop considerably during an acute phase response such as any type of stress or inflammation. The magnitude of drop in the serum level depends on down regulation of gene expression and translation, increased catabolism, transfer of proteins to extravascular pools, and reduced synthesis of proteins from the reduced availability of dietary and amino acids.

Inflammation or more specifically, the mediators of inflammation, exert major effects on serum hepatic protein levels by altering normal metabolism of these proteins and causing

capillary leaks. Some of these mediators include cytokines, hematopoietic factors, prostaglandins, thromboxanes, and complement. These mediators can also activate neuroendocrine mechanisms which change physiologic and metabolic homeostasis.

During this inflammatory process, cytokine tumor necrosis factor and secondary eicosenoid metabolites cause capillary membrane leakage into the extravascular space and as a result cause a decrease in these proteins. Hence, hepatic serum levels decrease independent of nutritional status. Once the stress or inflammation has subsided, hepatic protein metabolism is restored and serum levels begin to increase.

On the other hand, C-reactive protein (CRP) is referred to as a positive acute-phase reactant protein that increases in response to a stressful event. Measuring CRP levels may be helpful to determine when to maximize nutrition support therapy (e.g., as levels decrease,

inflammation would be subsiding).

It appears that much of the previously published literature does not address the relationship between inflammation and nutrition status and erroneously, serum protein markers such as albumin and pre-albumin were associated with poor nutritional status.

The most commonly monitored serum hepatic protein in clinical practice is serum albumin. Decreased serum levels of albumin correlate with the severity of the illness, increased length of stay, and poor clinical outcomes. They are indicators of morbidity and mortality along with the ability to recover from stress. Low levels of these serum hepatic proteins are found in the sickest of patients and levels do not increase until inflammation and stress subsides. However, low levels of these serum proteins seen during the inflammatory process can accelerate nutritional depletion.

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Information contained in this newsletter is meant to serve as an educational tool. As always, clinical judgment should be exercised in determining the appropriate therapy for specific cases.

### Upcoming Meetings:

- April 19-22, 2007 Nursing 2007 Symposium, Orlando, FL  
April 24-27, 2007 Oncology Nurses Society 32nd Annual Meeting, Las Vegas, NV  
June 2-3, 2007 Spring National Academy of Infusion Therapy, Orlando, FL  
June 4-7, 2007 INS Annual Meeting, Orlando, FL  
June 27-July 1, 2007 Annual Conference Oley Foundation, Hyannis, MA

### ***(Role of Hepatic Transport Proteins, cont.)***

How does all of this impact nutritional care? When serum hepatic proteins are evaluated properly, they can guide the clinician in determining who is at risk for developing nutritional inadequacies. These are the patients who will require attentive nutrition support therapy and monitoring. Failure of these serum hepatic levels to increase while feeding does not indicate inadequate nutrition intervention, but rather that the patient may not be recovering from their stress induced inflammation or illness. Nutrition assessment should encompass an accurate weight history including current weight and usual body weight along with body mass index for comparison, a well developed history including past health events, socioeconomic impacts, and eating patterns that may influence their current level of stress and inflammation. A nutrition-focused physical examination corroborates the history and current stressors, and available biochemical parameters can be obtained to further corroborate the history and physical findings.

Remember that laboratory values are just one part of the total picture. Once all of the puzzle pieces are joined and the patient's picture becomes clearer, the nutrition plan of care can be developed. The nutrition plan of care can then be implemented, monitored, and evaluated during the course of therapy to provide positive outcomes.

#### References:

- Charney P. Nutrition assessment in the intensive care unit: Pre-albumin, C-reactive protein, or none of the above: Support Line 2006; 29(1):13-17.  
Fuhrman MP, Charney P, and Mueller C. Hepatic proteins and nutrition assessment. JADA 2004;104:1258-1264.  
Russell MK. Laboratory monitoring. In Contemporary Nutrition Support Practice. Matarese L. and Gottschlich M. (eds). Philadelphia: 2003, p.45-59.  
Russell MK. Nutrition Screening and Assessment. In Nutrition Support Core Curriculum. Gottschlich, M. (chief ed.). American Society for Parenteral and Enteral Nutrition. 2007, p.163-186.

### **Answers to advanced cardiac life support: 1. B 2. Glasgow 3. C 4. D 5. True 6. A**

### Dipped Strawberry Dessert Kabobs

#### Ingredients:

- 12 strawberries cleaned
- 1/4 pound cake (can purchase "light") cut into 12 chunks
- 1 kiwi peeled and cut into 4 circles or 12 green grapes cleaned
- 1/3 cantaloupe cut into 12 chunks
- 2 1/2 ounces dark chocolate
- 6-Wooden skewers

*\*You can use any fruit in season to go with the strawberries, just vary the color for a colorful presentation.*

#### Directions:

Line a tray with wax paper. Melt the chocolate slowly in the microwave-approximately 40 seconds, remove and stir. May need to heat again to melt chocolate. Dip 6 of the strawberries into the chocolate and place on tray with wax paper. Chill for approximately 10-15 minutes.

Arrange fruit on skewers placing chocolate strawberry at top followed by various arrangements of the fruit and cake. Confectioners' sugar can be sprinkled across fruit and arranged on serving tray.

