Infection in patients with cancer occurs on a continuum, from infection to bacteremia, to sepsis, to systemic inflammatory response syndrome (SIRS), to severe sepsis, to septic shock, and finally to multiple organ dysfunction syndrome (MODS). Patients with cancer are particularly susceptible to infection, both from the cancer itself and from the treatment. The immune system is often compromised and myelosuppressive therapy interferes with the patient’s ability to mount an inflammatory response. Oncology nurses must be vigilant for signs and symptoms of infection because prompt recognition and treatment can prevent progression to sepsis and septic shock.

Definition and Incidence
There are a variety of definitions for the spectrum of sepsis. “Infection is an inflammatory response to the presence of microbes; invasion of normally sterile host tissue by these organisms is characteristic” (Shane, 2009, p 467). Bacteremia is the presence of viable bacteria in the bloodstream (Cope, 2009; Shane, 2009). “Sepsis is a complex interaction between an infecting microorganism and an individual’s immune, inflammatory, and coagulation responses” (Cope, 2009, p 558). The term systemic inflammatory response syndrome (SIRS), introduced in 1992, is a systemic response to infection characterized by two or more of the following signs: heart rate above 90 beats per minute, temperature above 38°C (100.4°F), white blood cell count greater than 12,000/mm³ or less than 4,000/mm³ or greater than 10% bands, or respiratory rate greater than 20 per minute. Septic shock is the presence of sepsis, with hypotension and hypoperfusion unresponsive to aggressive fluid replacement, leading to organ dysfunction (Cope, 2009). The final stage in the sepsis spectrum is multiple organ dysfunction syndrome (MODS), in which two or more organ systems are dysfunctional, leading to the inability to maintain homeostasis without immediate intervention (O’Leary, 2011).

Overall, the incidence of sepsis in the United States is about 750,000 per year, with 350,000 succumbing to the complications of the infections. Septic shock is the most common non-coronary cause of intensive care unit deaths in the United States, and the incidence has been increasing over the last 20 years. Patients with cancer are five times more likely to develop sepsis than those in the general population. Approximately five percent of patients with cancer will experience sepsis (O’Leary, 2011).

Presenting Signs and Symptoms
In general, the usual signs and symptoms of sepsis are fever, shaking chills and rigors, tachycardia, hypotension, tachypnea, and mental status changes. Fever is defined as a single oral temperature above 38.3°C (101°F) or a temperature of 38°C (100.4°F) sustained for at least one hour (Lewis, Hendrickson, & Moynihan, 2011). The oncology nurse must be cognizant of the fact that patients without sufficient neutrophils may be unable to mount an initial inflammatory response, as neutrophils are crucial to the process. Therefore, the only sign of infection in a patient with neutropenia (neutrophil count under 500/mm³) may be a fever (Cope, 2009). Other signs and symptoms would reflect the stage in the sepsis spectrum. A patient with poor perfusion may have cold, clammy skin, lethargy or coma, decreased breath sounds, decreased urine output, and laboratory parameters reflecting septic shock.

Risk Factors
The primary risk factor for a patient developing sepsis is a compromised immune system (see the discussion below about lines of defense). This includes many patients with malignancies. An infection involving any organ system, such as the respiratory; gastrointestinal; renal; integumentary; or bloodstream; can result in sepsis and progression to septic shock and MODS. Patients who are neutropenic are especially at high risk for infections that can quickly become life-threatening. Patients receiving chemotherapy, radiation therapy or biotherapy are at higher risk of infection because of the effects of these treatments on the immune system, as well as possible disruption of the integumentary system. In addition, patients often have invasive devices to facilitate the delivery of treatments. These devices also place the patient at risk for infection. These include central venous access devices, urinary catheters, Ommaya reservoirs, arterial catheters and chest tubes. Finally, age and comorbidities increase the risk of infection. Children under one year and adults over 65 are at higher risk than patients in other age groups. Patients with diabetes, autoimmune diseases, renal or hepatic impairment, HIV infection and alcoholism are also at higher risk of developing sepsis (Cope, 2009).

Pathophysiology
In healthy persons, there are three lines of defense against microorganism invasion and subsequent infection, in addition to an intact integumentary system. Granulocytes represent the first line of defense as they phagocytize and kill bacteria. Individuals with
I have recently joined MDONS after being asked to give a talk back in September. I was impressed at that time by the number of professionals willing and able to come out in the evening to hear guest speakers and learn about new aspects and treatments. It was revealed to me how little I have contributed to the growth of my practice other than my regular work commitment. This sparked my mind out of the inertia and made me realize that it is my responsibility to grow my practice and increase my knowledge. I began to hear that little whisper in my ear telling me that now is the time for me to expand my horizons. I have given my family my full attention for the last 18 years; the kids are fairly self-sufficient and it is time for me to focus on learning and growing in my chosen field.

I initially felt rather inadequate; asking myself “What experience do I have to contribute to the field in a meaningful way? Those feelings made me examine the situation more intensely. Starting with the basics, I am a staff nurse and have been for 25 years. I don’t have any extra certifications or degrees but have worked in various areas of nursing throughout the years. Those areas included medical, surgical and neuro intensive care as well as plastic surgery and general surgery. I have spent the last 8 years doing Gamma Knife Radiosurgery nursing which is different from many other types of nursing. It involves special techniques in addition to dealing with families, neurosurgeons, and radiation oncologists. On much urging from coworkers, who are members of MDONS, I took the first step and attended the 23rd annual updates in Oncology Nursing in Southfield. Once again, I was amazed to see all the people in attendance. Looking around, I felt in awe of all the people in the audience that give of their time and talents in treating people with cancer. At my table there was a home health nurse, a research nurse, a radiation oncology manager, a nurse case manager and me. I found it very moving and interesting that so many people from so many aspects in the field were present.

Here were two hundred people in this one hall, in one city, in one state, in one country. It made me think that this is just one little corner of the world. Here we all were gathered for the same expressed purpose of helping patients who have cancer. This experience helped me realize that I did belong as part of this group for which I felt honored and proud.

When you expand your mind and think of all the people statewide, countrywide and worldwide that are involved in treating people with cancer, it is overwhelming. This is not to mention the different aspects of treating cancer patients (e.g. the psychological aspects, family dynamics, drug interactions, pain control, spiritual aspects etc.). Interacting with these people reaffirmed my place in the field and the MDONS chapter. It gave me a sense that I am doing what I am supposed to do. I am following my calling and purpose in life. It verified that we do make a difference! We touch people’s lives every day. From the simplest of things as a gentle touch or the way that we speak to patients and their families, to chemo and radiation treatments; we all have a role in a patient’s treatment and we all can and should make a difference.

Interconnecting and conversing with other professionals allows us to learn of other procedures and gives us alternative views so that we can take away the good things that work and not re-invent the wheel. By better enabling us to maximize our efforts to help our patients, it fosters our ingenuity, authenticity, and our self-esteem this in turn also gives our patients and their families confidence in what we suggest to them.

As I have found, do not let your shyness, feeling of inadequacy and busy schedule deter you from becoming part of this auspicious group for the good of our patients.

Thank you MDONS for making me feel so welcome and infusing a new found energy in my work.

FROM THE EDITOR MICHELLE MANDERS, RN, GUEST EDITORIAL

SEPSIS AND SEPTIC SHOCK IN THE PATIENT WITH CANCER
Continued from front page

decreased levels of granulocytes (neutrophils and bands) may not have sufficient cells to mount this line of defense (Lewis et al, 2011). The second line of defense is termed cell-mediated immunity, which involves action by monocytes, macrophages, and T lymphocytes to eliminate pathogens (including bacteria, viruses, and fungi) and malignant cells. Humoral immunity, involving B lymphocytes which produce antibodies specific to foreign bodies or antigens, is the third line of defense against infection (Cope, 2009). Many patients with cancer have compromised cell-mediated and humoral immunity, making it difficult to mount these defenses.

The pathophysiology of sepsis is complex. As bacterial pathogens are phagocytized, endotoxins from gram-negative bacteria and exotoxins from gram-positive bacteria are released into the bloodstream. This leads to vasoactive mediators, in the form of cytokines, being released by macrophages. The cytokines released can be either inflammatory (tumor necrosis factor alpha [TNFa], histamine, kinins, interleukin 1 and 2, interferon gamma [IFNγ]) or anti-inflammatory (interleukin 4 and 10, and transforming growth factor beta [TGFβ]). Although the factors determining which cytokines are released are not known, speculation is that the type of bacteria, the site of infection, and the size of the bacterial inoculation influence cytokine release (O’Leary, 2011). Mediators of inflammation lead to the release of additional inflammatory mediators, including interleukin 6 and 8, thromboxanes, platelet-activating factor, prostaglandins, and complement. These inflammatory mediators result in an inflammatory cascade that results in fever, chills, vasodilation, and hypotension. The anti-inflammatory mediators attempt to reverse this process, but are often overwhelmed by the inflammatory responses (O’Leary, 2011).

O’Leary (2011) notes that the most common cause of circulatory collapse in patients with cancer is septic shock; the primary feature of which is arterial vasodilation. Additional inflammatory cytokines such as histamine, bradykinin, and serotonin lead to capillary leak syndrome, which worsens the hypovolemia by third-spacing fluids. Consequences of this situation include hypotension, hypoxia, ischemia, ileus, oliguria, DIC, and liver failure (O’Leary, 2011).

Prevention

The primary strategies to prevent sepsis in patients with cancer are recognition of patients at risk, and thorough assessment for signs and symptoms of infection. Patient education about manifestations of infection, especially fever, and what to do if they occur, is vital to ensure the most rapid response possible. Good hand hygiene by all caregivers and patients is a basic measure that should be stressed. Strict aseptic technique by all caregivers and patients is a basic measure that should be stressed. Strict aseptic technique by all caregivers and patients is a basic measure that should be stressed. Strict aseptic technique by all caregivers and patients is a basic measure that should be stressed. Strict aseptic technique by all caregivers and patients is a basic measure that should be stressed. Strict aseptic technique by all caregivers and patients is a basic measure that should be stressed. Strict aseptic technique by all caregivers and patients is a basic measure that should be stressed. Strict aseptic technique

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HIGHLIGHTING A MEMBER: MELISSA LURIE, RN, BSN

After trading voice mails and a couple of e-mails, I finally had the opportunity to talk with a very lovely and talented nurse, by the name of Melissa Lurie. Melissa describes herself as a “newer nurse in this field who is eager to learn.” I found excitement in her voice as we talked about her career and becoming a part of the oncology nursing specialty.

Melissa volunteered as a 16 year old teenager at her local hospital as a “Candy Striper.” She knew then that she wanted to become a nurse. She said even the doctors influenced her pursuit of nursing. She began her formal education in 1975 at Mercy College of Detroit, but after a year, marriage and then a family changed her direction for a while. After almost 20 years she returned to college graduating from for Oakland Community College with an Associate Degree in Nursing in 1996. She worked for a year at Crippenton Hospital in Rochester, then in 1998 began her career working part time at Beaumont Hospital in Royal Oak. She worked in Urology research from 1998 until 2002. After 9-11 she was laid off, however she was able to secure a position in Orthopedic research. In 2009, when an opening became available in Radiation Oncology Research she made a move to oncology. Melissa said she didn’t have any oncology experience, but had the research background, so the manager was willing to train her. Two of her colleagues, Michelle and Gayle, encouraged her to join MDONS where she would “learn and grow as a professional.”

Melissa earned her BSN from Oakland University in 2008. She was inducted into Sigma Theta Tau in 2006. She obtained her Certified Clinical Research Professional (CCRC) certification from ACRP (Association of Clinical Research professionals) in 2004.

Oncology has always been an interest for her. Her grandmother died from metastatic breast cancer. She has lost other family members to lung and pancreatic cancer.

From these experiences she felt a pull toward the field of oncology nursing believing she could make a difference. “I love being a research nurse” Melissa told me. “I like the bond that’s formed as you see patients and their families at every office visit, hoping that will be up to 5 years and perhaps longer.”

In 2009, Melissa became a member of the Oncology Nursing Society and MDONS. She has volunteered for the Tar Wars program for the last two years and LOVES it, planning on helping again this coming November. She volunteers at Beaumont in the NODA program – “No One Dies Alone” since it was started 2-3 years ago. This program pairs staff with patients who either have no family or the families cannot be with them. Then staff members sit with the patient providing them comfort. She also participates in the Susan Komen and Pancreatic Cancer (PAN CAN) annual walks.

Melissa lives with her husband of 36 years, Bob, and two cats, Fifa and Corey. She has three grown sons. Rob, age 31, is a chef at the Glass House in Ann Arbor. Her middle son, Jason, lives and works in Jerusalem, Israel. Jason works at World Health Energy (WHEN). WHEN is a company that produces energy and nutritional products from algae. He will be married in May to Nechama Finer (which means Melissa is now going to be a “mother-in-law”). Nechama, is the manager of the Blue and White Art Gallery in the Old City of Jerusalem. John, 25 is her youngest son and he lives in Los Angeles. He is an assistant film editor for Pie Town Productions, producers of House Hunters and other reality TV shows.

Melissa loves to read, travel, walk and just started riding with her husband on bike trails at either the Macomb Orchard or the Paint Creek Trail. She loves any vacation that has sunshine and a beach. Jamaica, Hawaii, and Israel have been some of her favorite destinations. She will, hopefully enjoy many more in the years ahead. She has also traveled to England and Wales.

Melissa’s research background has given her a beginning for publication: Prospective Phase 2 Trial of Moderate Dose Image-Guided Stereotactic Lung Radiotherapy (SBRT) for Early Stage Non-Small cell lung cancer (NSCLC) and Pulmonary Metastases with Serial 18F-FDG-PET imaging and Pulmonary Function Testing (PFT), presented at ASCO 2012. Authors: Inga Siner Grills, MD, Victor Mangona, MD, Richard Hymas, MD, Andrew Aneese, MS2, Ovidiu Marina, MD Larry Kestin, MD Melissa Luire, RN, Di Yan, D Sc.

I had the distinct pleasure of getting to know Melissa. I do hope you will take the time to meet her also.

Sandy Remer, RN, BSA, OCN, CCRP

MEETING SUMMARIES

February

MDONS 23rd ANNUAL CONFERENCE: UPDATES IN ONCOLOGY
SUMMARIZED BY SUSAN HANSSELL, RN, BSN, OCN

On February 6, 2013 Michelle Wallace, MDONS President, welcomed attendees of the 23rd annual MDONS Conference held at the Shriners Silver Garden Events Center in Southfield. The speakers covered a number of current topics, starting with Dr. Elisabeth Heath, MD from the Karmanos Cancer Institute, who discussed the current debate over clinical guidelines for PSA testing.

Next on the agenda was Regina Franco, MSN, AMP, RN from Greenville (N.C.) Hospital System. She discussed the Commission on Cancer’s (CoC) Cancer Program Standards 2012: Ensuring Patient Centered Care Recommendation 3.3 dictating the development and implementation of cancer care summary and follow-up plan for cancer survivors for phase-in by 2015. The CoC is the multifunctional accreditation consortium established by the American College of Surgeons that is “dedicated to improving survival and quality of life for cancer patients through standard-setting, prevention, research, education, and the monitoring of comprehensive quality care.” (http://www.facs.org/cancer/coercar.html). If your organization

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is currently accredited or seeking accreditation from the CoC, you may know (or be) someone involved in plans to meet this new standard.

Ms. Franco described her organization’s efforts to develop a cancer survivorship program, the challenges (provider support, standardization, program scope and launch, medical records format and availability, HIPPA, and controlled program growth) and benefits of the program. She offered several helpful lessons learned; emphasizing the need to start with a small population of patients, and implement program refinements prior to launching to a broader patient population. She also recommended investigating survivorship/chronic care models in other areas of the organization (i.e. diabetes clinics, cardiology clinics, pediatric oncology departments, etc.) to see if these models will provide a good starting point for the cancer survivorship program design.

After a brief break, and a visit to the many conference sponsor tables, participants returned to a well-received talk on communicating with cancer survivors. Dr. Bricker described the six step protocol he teaches providers at Henry Ford Hospital to communicate bad news to patients. She also recommended investigating survivorship/chronic care models in other areas of the organization (i.e. diabetes clinics, cardiology clinics, pediatric oncology departments, etc.) to see if these models will provide a good starting point for the cancer survivorship program design.

After lunch was provided, Susanne Quallich, ANP-BC, NP-C, CUNP, Department of Urology, University of Michigan delivered a fast-paced talk on the treatment of male sexual dysfunction and fertility. She discussed the psychosocial issues surrounding male sexual dysfunction, and the importance of assessing the patient’s expectations as well as his partner’s expectations (often not the same). Treatment options for sexual dysfunction were detailed and the benefits/limitations of each.

**March**

**NURSING STRATEGIES TO OPTIMIZE OUTCOMES IN HORMONE RECEPTOR-POSITIVE BREAST CANCER PATIENTS: DIAGNOSIS, PROGNOSIS, AND TREATMENT**

**PRESENTED BY: G. LITA SMITH, MSN, RN, NP**

**SUMMARIZED BY: SABRINA RICHER, MSN, RN, OCN**

The estimated incidence of breast cancer in 2012 was 226,870 cases of invasive breast cancer and 53,805 cases of ductal carcinoma in situ (DCIS). The incidence is highest among Caucasians and lowest in Asian Americans. There are 2.6 million breast cancer survivors in the United States. An estimated 75% of breast cancers are ER positive.

Breast cancer is not just one disease anymore thus everyone cannot be treated the same. There are subsets of breast cancer that are defined by molecular markers. Each type requires personal treatment. Prognostic factors which determine the risk of recurrence include: tumor size, nodal size and number of lymph nodes, histologic grade, hormone status (ER/PR), HER2 status, and most recently, genomic profiling.

Genetics help to identify patients at high risk of developing breast cancer. Yet, testing find mutations, not disease. Genomics looks at the patient’s individual tumor biology. Genomics and gene expression profiling tests focus on the cancer itself and can help determine the likelihood that a patient may recur (prognostic) and predict benefit from chemotherapy and hormonal therapy (predictive). Examples of genetic and genomic tests are BRCA1 and BRCA2. Currently the genomic test options are the Oncotype DX (accepted by the NCCN, ASCO, St. Gallen) and MammaPrint (FDA approved).

Oncotype DX testing provides useful information to help guide treatment decisions. The RS value provides a scientifically validated continuous measure of risk of distant recurrence and magnitude of chemotherapy benefit. The result allows an individualized assessment of risk and response to therapy, which contributes to making more informed treatment decisions for individual patients.

According to the NCCN guidelines, patients should consider genomic testing if:

- Tumor is >0.5 cm
- HR positive
- HER2 negative disease
- pT1, pT2, or pT3; and pN0 or pN1mi (2mm axillary node metastasis)
- Newly diagnosed patients with node negative, ER positive breast cancer who will receive Tamoxifen (based on ASCO recommendations)

**TREATMENT**

The management of HR positive early breast cancer in the premenopausal patient includes the use of tamoxifen. Tamoxifen, a selective estrogen receptor modulator (SERM) provides a reduction of 47% in disease recurrence and a mortality reduction of 26%. Side
effects include bone strengthening and possibly improving the lipid panel, while more negative ones include hot flashes, vaginal dryness and sexual disturbance. Rare side effects are endometrial cancer, cataracts, stroke and VTE (venous thrombotic events).

The ATLAS trial (December 2012) showed a 2.8% benefit to continue Tamoxifen for 10 years as compared to previous recommendations of 5 years (12.2% died from breast cancer in the 10 year arm and 15% died from breast cancer in the 5 year arm). The SOFT and TEXT trials are currently ongoing and evaluating ovarian suppression with either Tamoxifen or Exemestane in some combination.

Current endocrine treatment for HR positive postmenopausal patients is based on the recommendations from ASCO. The ASCO guidelines of 2010 recommend that postmenopausal women with HR positive breast cancer consider incorporating Aromatase Inhibitors (AI) at some point during adjuvant therapy, either as up front therapy or as sequential treatment after Tamoxifen. Postmenopausal women at diagnosis should have one of the following:

- AI for 5 years
- Tamoxifen for 2-3 years then AI to complete 5 years of endocrine therapy

OR

- up to 5 years of an AI
- AI for 2-3 years followed by Tamoxifen to complete 5 years of therapy
- Tamoxifen for 5 years followed by AI for 5 years
- Tamoxifen for 5 years if intolerance of AI, decline AI, or contraindication to AI

A meta-analysis showed a lower recurrence rate with AI than Tamoxifen. Absolute benefit was 3% at 5 years and absolute difference in overall survival (OS) was minimal; longer term follow up is required. In the ATAC trial, a 10 year analysis demonstrated annual HR of recurrence was 2-3%. This was consistent with meta-analysis which demonstrated no significant survival advantage.

AI block activity of aromatase, an enzyme, which the body uses to make estrogen in the ovaries and other tissue. They are only used in post-menopausal women. Third generation AI include: anastrozole, letrozole (non-steroidal), and exemestane (steroidal). Side effects (SE) of AI include: hot flashes, night sweats vaginal dryness, arthritis, arthralgias and bone loss.

Many patients find taking oral medication difficult. Sometimes they forget to take them or try not to use them if they are feeling good. Real world adherence rates, for many, range between 40-50%. Several trials are under way to evaluate the timing and duration of adjuvant anti-estrogen therapy including the study of letrozole extension trial (SOLE), is a phase III trial, which is evaluating the role of continuous letrozole vs. intermittent letrozole following 4-6 years of prior adjuvant endocrine therapy.

Interventions to overcoming recurrence and endocrine therapy resistance in adjuvant HR positive breast cancer are, at times, necessary. In endocrine resistance, multiple mechanisms there are responsible. These include deregulation of various components of the ER pathway, alteration in the cell cycle, alterations in cell survival signaling molecules and activation of escape pathways that can provide tumors with alternative proliferative and survival stimuli. There are many patterns of endocrine resistance that can develop. These include pan-endocrine therapy resistance or tumors that are inherently insensitive to ER targeting despite ER expression, agent-selective resistance-tumors that are estrogen dependent but resistant to one or more specific endocrine therapies, and acquired resistance-tumors that initially respond but subsequently progress.

Options for progression on tamoxifen include the use of AI such as letrozole, anastrozole, or exemestane. Additional options include fulvestrant-500mg once a month.

If a patient progresses on AI therapy, there are several options to be considered. These include the following:

- tamoxifen (if not previously administered)
- Fulvestrant
- Everolimus plus Exemestane
- after finishing treatment with Letrozole or Anastrozole
- recently approved by the FDA
- Chemotherapy

The Bolero-2 phase III RCT compared everolimus and exemestane to placebo and exemestane for ER positive HER2 negative advanced breast cancer refractory to non-steroidal AI (N=724). everolimus (Affinitor) is a sirolimus derivative that inhibits MTOR signaling pathway through allosteric binding. The combination of everolimus with AI resulted in synergistic inhibition of the proliferation and induction of apoptosis in preclinical models. Progression free survival was the primary endpoint. The combination was 6.9 mos. median duration vs. 2.8 mos for single drug. Combination therapy was associated with higher incidences of AEs than exemestane alone and a higher percentage of patients discontinued everolimus due to lack of tolerability. Adverse events with everolimus, most relevant toxicity between groups included (higher) stomatitis, rash, weight loss, dysgeusia, epistaxis, hyperglycemia, pneumonitis, and thrombocytopenia. Benefits should be weighed against side effects observed with everolimus. The potential of everolimus to benefit patient survival has not yet been determined.

Nursing considerations with everolimus include compliance, educating patients on SE, and management of side effects (oral ulceration, infection, non-infectious pneumonitis, rash, hyperglycemia). Everolimus has immusuppressive properties and may predispose patients to bacterial, fungal, viral, or protozoal infections. Local and systemic infections have occurred. Be vigilant for signs and symptoms of infection and treat appropriately and promptly.

Culture influences the patient’s pain experience and health care interactions. Culture includes learned behavior, values and beliefs, and is transmitted from generation to generation. It is dynamic across time and place and it evolves and is useful. It provides us with a guide as to how we see the world. It helps us get along with others. Culture provides us with understanding and communication. Culture is complex. There are group patterns but individuals within a culture vary. For this reason we need to avoid a cook book approach when assessing culture.

Physiological damage causes pain. How the individual responds to pain may be affected by culture. For example, a little boy experiencing

April

CONSIDERING CULTURE IN MANAGING PAIN

PRESENTED BY DR. STEPHANIE MYERS SCHIM, PHD, RN, APHN-BC
SUMMARIZED BY RITA DUNDON, RN, MSN

Dr Schim, an Associate Professor at Wayne State University presented the lecture on pain and culture. Dr. Shim has worked as a home care nurse earlier in her career and thus brought firsthand knowledge and academic information to her lecture on the role of culture in pain management.

Continued on following page
pain may be told to “man up” or told not to cry. In the same culture a girl is expected to cry when hurt. The pain experience is subjective. Pain is what ever the patient says it is.

Nurses need to consider culture when assessing and treating pain. We need to consider the individual’s values and beliefs. We need to be aware of our own biomedical cultural values. As health care providers we need to be unbiased, non-judgmental and knowledgeable. We value teaching. We expect our patients to be clean, sober, prompt, compliant and grateful. What if they are not? Then what?

It is useful to understand the patient’s community culture. This is especially true if we are new to the setting. Cultural patterns vary and working with patients in Detroit’s inner city will be different from those in Bloomfield Hills. Knowledge about a patient’s culture can give us cues about questions we should ask, or not ask. Asking open ended questions increases understanding. Some useful questions which may be helpful are:
- Tell me about your pain.
- Help me understand how your pain is affecting you?
- Can you explain what you are experiencing?

Language barriers make pain assessment difficult. We need to be careful in choosing interpreters. Relatives may not be appropriate interpreters because the individual’s realities may be ignored.

Nurses may say “I don’t have time to consider culture when assessing pain. A standard pain scale is “good enough”. Excellent pain care is culturally congruent care. A little time spent up front on cultural assessment can lead to time saved and less frustration in the long run. It may also improve patient compliance and ensure better outcomes. The patient will be more satisfied with care and have improved pain control.

FROM THE PRESIDENT ANGELA MAYNARD, RN, MSN, OCN, CBCN

MDONS members are cancer care advocates in their workplace, community, and in society. Members are effective leaders and contribute to the knowledge of oncology nurses nationally, regionally, and locally, as well as in their workplace. Several examples of MDONS members leading the way were in evidence at the 38th ONS Annual Congress in Washington DC.

• Susan Wozniak was the recipient of the 2013 ONS excellence in Oncology Nursing Health Policy and Advocacy Award. She led the way with a visit to the Hill with other ONS members. They met with members of congress and were able to visit the FDA and NCI.
• Rose Ermete was recognized for the SIG (Special Interest Group) Excellence Award. Rose is the coordinator for the Clinical Trial SIG. Rose has also served on the nominating committee for ONS.
• Peg Esper a member of both MDONS and the Ann Arbor ONS Chapter was the recipient of the 2013 ONS Clinical Lectureship Award. She presented one of the best lectures of the Congress on “Effective Symptom Management to Optimize Care with Oral Cancer Therapy”. She has served on the ONS board of directors and currently serves as an associate editor of the Journal of the Advanced Practitioner in Oncology.
• April HazardVallerand enhanced our knowledge of breakthrough pain management. She shared her experience in managing pain in a pancreatic cancer patient. She was able to fulfill her promise to the patient to share the patient story and educates nurses on the management of breakthrough pain.
• Pam Laszewski, Lena Andriths, Carole Bauer, Cynthia Zelko, and Eva Vera Cruz had a poster presentation on a research project. It was titled “4mating Patient Education to Promote Adherence to ONS PEP Guidelines for Radiation Dermatitis”.

What do these accomplishments mean? They mean we are empowered by what we do. We care. We want to make a difference in patient’s outcomes. We want to make it easier for them to get care. We are leading from the heart and that moves us to a higher level in our work place, community, and society.

One of Kouzes and Posner’s five practices of exemplary leadership is encourage the heart. As members of MDONS we share common values and we need to recognize contributions of our members. Do not think you are not leaders or recognizable. You are leaders by being ONS/MDONS members and attending continuing education opportunities because leadership begins with self development.

The leadership examples listed above recommend ways to improve and take chances that generate knowledge and improve the lives of our patients. Providing safe evidence based high quality care can only come from those who advocate for the profession and your patients.
SEPSIS AND SEPTIC SHOCK
IN THE PATIENT WITH CANCER

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Assessment and Diagnosis
Assessment for signs and symptoms of infection and sepsis begins with a complete history, including risk factors for infection as outlined above. Evaluation for comorbidities, medications that may affect the immune system, exposure to any communicable diseases, and immunization status are all important data to elicit. A thorough review of systems is vital to elicit symptoms that suggest infection. These include general symptoms such as fever, chills, and rigor; head and neck symptoms including eye drainage, nasal discharge, oral mucosa and dental pain, and stiff neck; respiratory symptoms such as coughing, sputum production, shortness of breath, and chest pain; cardiovascular symptoms such as palpitations, leg pain or edema; musculoskeletal symptoms including joint pain, warmth, swelling, or sudden decrease in activity level; the gastrointestinal system for abdominal pain, bloating, diarrhea, nausea or vomiting; the genitourinary system for dysuria, frequency, new onset incontinence, foul smelling vaginal bleeding or discharge; and the neurological system for confusion, memory loss, seizures, headaches, ataxia or other balance problems.

Physical examination parameters for patients at risk of sepsis includes vital signs and pulse oximetry, assessing oral cavity for ulcerations, candida infections or erythema, auscultating lung fields for adventitious or decreased sounds, auscultating cardiac sounds for tachycardia and arrhythmias, auscultating the abdomen for bowel sounds, palpating abdomen for hepatomegaly or splenomegaly, assessing extremities for peripheral pulses and edema, and assessing the neurological system for mental status changes, coordination and balance, pupillary size and reactivity, and focal abnormalities.

Diagnosing sepsis is based on the above history and physical exam findings, as well as diagnostic test results. These studies include blood and urine cultures, sputum cultures, if applicable, stool cultures if diarrhea is present, complete blood count (CBC), chemistry profile, coagulation studies, chest radiograph, and electrocardiogram (EKG). Blood cultures should include at least two sets, one peripheral and one from a central venous catheter, or both from separate peripheral sites. A positive blood culture confirms bacteremia, but a negative blood culture does not exclude it. In patients with neutropenic fever, a minority of cultures will be positive, and thus relatively few infectious agents will be identified (Lewis et al, 2011).

The CBC should evaluated for total white blood cell count above 12,000 cells/mm3 or below 4,000 cells/mm3, absolute neutrophil count (ANC) below 1500 cells/mm3, percent of blasts, and decreased hemoglobin and platelet counts. An ANC below 500 cells/mm3 places the patient at very high risk of infection. Fever and ANC below 500 should prompt immediate action. In addition, blood sugar abnormalities may be present. “In sepsis and septic shock, hyperglycemia will occur as a result of the compensatory anti-inflammatory response with gluconeogenesis and the reduction of insulin secretion” (Cope, 2009, p 563). The chest radiograph may show infiltrate only if there are sufficient neutrophils to mount a response. It’s not unusual for a chest x-ray to be negative while the patient is neutropenic and later show an infiltrate when the neutrophil count rises.

Evidence-based Treatment Strategies
The hallmark of therapy is broad-spectrum empiric antibiotics while waiting on culture results, especially if the patient is neutropenic. “Empiric therapy is justified by the acuity with which the neutropenic patient can develop fever and progress to sepsis” (Lewis et al, 2011, p 297). Antibiotic choices depend on the suspected source and site of infection, as well as the susceptibility patterns and prevalence of pathogens in the particular setting. Possible antibiotics include single agents such as cefepime, imipenem, meropenem, or piperacillin/tazobactam. Combination therapy can be used for patients who are at high risk because of neutropenia, and include an aminoglycoside plus cefepime, or ciprofloxacin plus antipseudomonal penicillin. Vancomycin, linezolid, or daptomycin are not routinely recommended, but vancomycin may be justified if central line infection is suspected, the patient is known to be colonized with methicillin resistant staphylococcus aureus (MRSA), or the hospital has a high rate of nosocomial MRSA infections (O’Leary, 2011).

Besides treating the infection, management includes treatment of inflammation, fluid resuscitation, hemodynamic support, vasopressor and inotropic agents, as necessary, and oxygen therapy. A bundle of management strategies was developed jointly by the Surviving Sepsis Campaign (SSC) and the Institute for Healthcare Improvement (IHI) with the goal of decreasing the relative mortality of sepsis by 25% by 2009 (O’Leary, 2011). The severe sepsis resuscitation bundle (SSRB) identifies seven tasks that should be initiated immediately, and must be completed within six hours of presentation of patients with signs and symptoms of sepsis or septic shock. The seven tasks are: (O’Leary, 2011, p 971-972).

1. Measuring serum lactate. Lactate is elevated in patients with severe sepsis and evidence of poor tissue perfusion.
2. Collecting blood cultures. Positive blood cultures are identified in 30 to 50% of patients presenting with signs and symptoms of severe sepsis.
3. Early administration of broad-spectrum antibiotics. This reduces mortality in patients with gram-positive and gram-negative bacteremias. These should be administered within one hour of presentation, immediately after cultures are obtained.
4. In hypotensive patients, delivering a fluid bolus administered over 10 to 15 minutes to quickly expand the intravascular volume.
5. Vasopressors, if not responsive to fluid resuscitation.
6. Achieve central venous pressure (CVP) above 8 cm H2O (central line needs to be placed for this and fluid resuscitation repeated until goal is met).
7. Maintain central venous oxygen saturation above 70%. Packed red blood cells may be necessary to meet this goal after CVP is above 8 cm H2O. This may help to maintain central venous oxygen saturation as well as keep the CVP above 8 for a longer period of time than fluids alone.

Additional measures that should be taken include DVT prophylaxis, insulin therapy, consideration of activated protein C administration as an anti-inflammatory and anticoagulant agent, and nutritional and electrolyte support. For patients with severe sepsis, intubation and mechanical ventilation may be necessary due to pulmonary complications secondary to inadequate gas exchange, pulmonary edema, encephalopathy and altered level of consciousness (Cope, 2009).

Implications for Nursing Practice
The oncology nurse is often the first health care provider to see the patient in the outpatient area, and therefore, is in the best position to identify signs and symptoms of infection. Prompt identification is crucial to minimize morbidity and mortality in these patients. Early identification and treatment is the key to maximizing patient outcomes.

References
The Chapter Capsule

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