Managing Breast Cancer in the Elderly: Dysphagia and Oral Complications

Nursing Edition

In This Issue

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Educational Objectives

At the conclusion of this program, the participant will be able to:

- Discuss the prevalence of breast cancer in the elderly
- Discuss current and available treatment modalities and strategies and the importance of estrogen
- Discuss the prevalence of dysphagia and other treatable oral complications in the elderly and understand how they affect treatment options
- Identify questions which may help determine if dysphagia or other oral complications are an issue for their patients

Editorial: Overview of Breast Cancer in the Elderly

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Aging and cancer

An estimated 13% of the United States (US) population, or 35 million people, were 65 years of age or older in 2000.[1] In 2011, the baby boom generation will begin to turn 65. By 2020, it is estimated that 30% of the US population, or 75 million people, will be 65 or older.[2] One's life expectancy is projected to increase by 10 years by 2050.[2] These trends will increase the number of persons with cancer because cancer

is recognized as primarily a disease of the older adult.

Yancik and Ries reported that approximately 60% of all cancers occur in people older than 65.[3] While cancer-related mortality has decreased in younger adults, it has increased in individuals age 65 years or older. The increase in reported cancer deaths is understood to be due to the aging populations.[4] Mortality rates in the older adult are believed to be influenced by the type of cancer. Repetto & Balducci report that typically cancers in the older adult are believed to be less aggressive, and Cope and Reb reported that older women with breast cancer tend to have less aggressive tumors. This commonly held belief has the potential to impact the treatment choice, side effect management and expected outcomes. Surveillance, Epidemiology and End Results Program (SEER) data results show that age-specific breast cancer incidence increases between the ages of 40-50 and peaks at 75-79. Almost one-half of the reported breast cancer incidence occurs in women 65 and older.[5,6]

Treatment of breast cancer in older adults

Older women present with symptoms not unlike those of younger women. The most common finding is a painless mass. One distinguishing feature is that in most older women, the lump will likely be malignant. Women over the age of 85 are likely to present with metastases.[7] Unique to the older woman is, at diagnosis she is likely to have three or four chronic conditions or comorbities and she is less likely to participate in clinical trials. We therefore lack the evidence to develop and establish treatment guidelines for this cohort.

The care of the older adult with any cancer can be a challenge due to characteristic physical and psychosocial issues. Four out of five persons over the age of 65 is said to have one or more comorbidities. Cancer and aging is fast becoming a significant area of study primarily because understanding the problems unique to the older adult with cancer has only recently been acknowledged. One of the reasons for this may be that the older adult has not been included in large or multisite clinical trials. Payne and Schilsky have reported that health care providers tend to avoid or ignore older adults when recruiting for clinical trials and older adults with cancer have their own reasons for not asking about clinical trials or seeking to participate in them.[8,9] Conditions such as existing disabilities and functional status, along with cancer diagnosis (tumor type and stage of the disease) impact the patient evaluation, choice of treatment and ultimately the prognosis and outcome. Older women are reported as often under-treated, many times due to their age, but also due to these co-existing conditions.

As a whole, older women have more mastectomies and when they do have lumpectomies, may not receive radiation therapy (XRT). Velanovich and colleagues report that the reasons women over 65 did not receive optimal treatment

included prohibitive medical conditions, the tumor pathology was considered favorable, patient refusal and unexplained reasons.[10] This is compared to the reasons why women under the age of 65 were under-treated which include prohibitive comorbidities, favorable tumor pathology and patient refusal. In this newsletter, Dr. John Inzerillo and Michael T. Inzerillo present an overview of breast cancer therapies and highlight some of the variables addressed in treatment choice.

Only recently, do we have some degree of information on how antineoplastic agents affect older adults. Lichtman reports evidence that some new agents may be well-tolerated by older patients, even those who are frail, and that these agents will also offer the opportunity for palliation.[11] Recent interest and research in cancer survivorship focuses on quality care for cancer survivors and it is important to note that a large number of cancer survivors are older adults with cancer.[8]

Decision making

Decision making by the older adult is an important consideration. Initially, any patient's main concern will be focused on a chance of a cure and identifying any possible spread of the disease.[12,13] The older adult patient will differ in terms of the amount of information she or he seeks, the content of information and the sources of information. Older adults may have more friends and family of the same age who have had an experience with cancer and that can influence their decisions.[14] Older adults are also more likely to have a fatalistic attitude toward a cancer diagnosis because of the influence of their own previous experience or that of others close to them.[15] Other factors affecting this process include the patient's age, educational level, the social structure of the family and the influences of relatives and friends, financial concerns and insurance coverage.

It has been shown that older adults with cancer are more likely to believe that they lack the ability to influence their illness. This is due to a demonstrated age-related difference in locus of control. Baltes and Staudinger described age-related differences in coping and control strategies including that the older adult is more likely to behave in a passive manner perhaps believing that it will bring about support from health care professionals, family and friends.[16,17] Age-related cognitive alterations may restrict processing and memorizing information and therefore reduce any attempt to seek additional information.[18]

Making treatment decisions regarding a cancer diagnosis is often difficult and fraught with anxiety under the best of circumstances. Feeling forced to make these decisions within a short time and experiencing a decreased ability to comprehend new information while trying to process information from well-meaning friends and family may actually diminish a patient's ability to participate in the actual decision.[19] Also important is the older patient's understanding of a treatment that may or may not be "covered" and a fear of debt after treament. Many assume that in an "elderly" patient the alterations in body image are less significant. Such assumptions risk trivializing the impact that breast cancer can have on a woman of any age and fail to acknowledge the potential impact on treatment choice and decision making.

Communication

All of this said, the importance of appropriate communication becomes critical as an essential component of the patient-provider relationship as highlighted in this newsletter by Dr. Linda Krebs. The influence of others, previous experience, the media and internet and verbal and non-verbal communication can serve to miscommunicate information and understanding. Add to that cultural and language considerations and the potential for misunderstanding is significant. These factors do not act equally and independently, but rather, at multiple levels and with influence on one another. There are potential barriers to effective communication and opportunities to enhance communication when addressing the psychological, emotional and spiritual needs of the patient as well as informing a patient of their diagnosis, making treatment decisions and managing side effects of treatment.

The process of aging is an individualized process and is not always predictive of physical decline. A growing body of literature supports increased physical activity in the older population as a means of counteracting the negative physiological effects of normal aging and these benefits can be realized when the concepts are applied to the frail elderly population. Who is elderly? Is elderly defined by a specific age? The absence or presence of disease? The number of comorbidities? Which elderly patients are considered frail? The term frail is frequently used, and yet we lack any standard criteria for classifying this subgroup. Some use the term to describe those at risk for or already requiring assistance to perform basic activities of daily living. Can functional status define frail? Perhaps it is a combination of variables including inactivity with low energy intake, weight loss or low body mass index.[20,21] These are important questions that underscore the need to more clearly define terms that we use with, perhaps reckless abandon, including elderly and frail elderly. The risks associated with categorizing patients before we can clearly define a category cannot be over emphasized. Communication is an important concept when health care professionals communicate with one another as well as with the patients for whom we care.

"Nurses have a critical role in identifying the patient at risk for xerostomia...as a result of cancer therapy and/or a comorbidity."

Dysphagia and xerostomia

Xerostomia may also have multiple causes and therefore multiple, appropriate interventions. Decreased salivation is recognized as common in older adults and has been reported as affecting approximately 20% of older adults.

Whether or not it is related to age or medications, xerostomia is a symptom that can be easily disregarded, thereby risking otherwise avoidable complications. While there is much patients can do to help themselves, as nurses we must be able to effectively communicate these measures to the patient. And we must also support the patient's understanding that this is not an inevitable consequence of their therapy, requiring them to "just get through it."

Nurses have a critical role in identifying the patient at risk for xerostomia and dysphagia and the patient who may already be experiencing xerostomia and/or dysphagia as a result of cancer therapy and/or a comorbidity. A comprehensive or focal nursing assessment will include identifiying signs and symptoms of xerostomia and dysphagia. Swallowing disorders are reported as common in the elderly and may be a result of aging, the cancer diagnosis and/or comorbidities. To accept difficulties in swallowing as an inevitable consequence of aging or a comorbidity to the cancer therapy, is to overlook a symptom that can worsen existing conditions or lead to avoidable complications. In this newsletter, Dee DeLollo provides an overview of normal swallowing and discusses multiple causes and types of dysphagia. The importance of the transdisciplinary team in addressing dysphagia cannot be over-emphasized. There are multiple types and causes of dysphagia and therefore the treatment may require different approaches to realize a patient's full rehabilitation potential. Dysphagia and xerostomia, particularly in the elderly, leads to difficulty swallowing food and pills, which could lead to medication adherence problems, another avoidable consequence.

Nutritional issues

Valerie Kogut, in her interview, discusses frequently encountered nutritional issues in the older patient including risk factors, cultural issues, the impact of comorbidities, cancer treatments associated with nutritional deficiencies, the use of nutritional supplements and other appropriate interventions. It is important to note that while there is no direct correlation between dysphagia and breast cancer there is an increased incidence of breast cancer in female patients who have previously undergone mantle radiation for Hodgkin's disease now being reported in the literature.[22] As nurses, we must be aware of the increased risk for dysphagia in this cohort and be prepared to intervene appropriately. As the number of cancer survivors increases, the potential for including appropriate interventions for late effects of a previous cancer treatment increases as well.

An exhaustive discussion of cancer and aging, the elderly patient with breast cancer, treatment choices and challenges, communication, dysphagia, xerostomia, and related nutritional challenges and opportunities extend beyond the scope of this newsletter. We do hope, however, that we have stimulated the reader to think about them, perhaps in a new and different way.

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Overview of Dysphagia, Xerostomia and Oral Complications

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Introduction

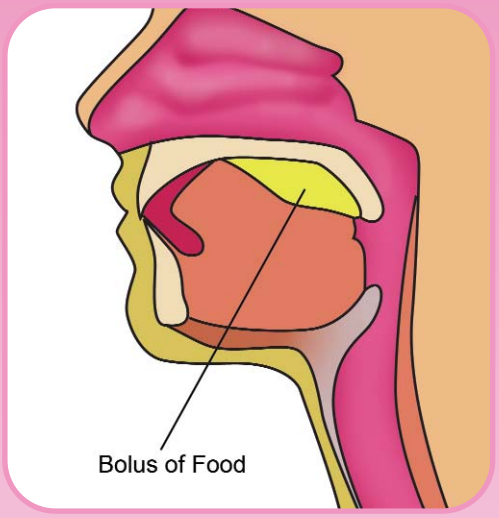
Dysphagia is defined as abnormal swallowing from impaired coordination, obstruction or weakness affecting swallowing biomechanics.[1] Swallowing disorders are common in the elderly. Dysphagia is currently estimated to affect more than 18 million adults in the United States, and it has been proposed that this number is likely to rise in the future owing to the aging population and a reported association between advanced age and swallowing difficulties.[2]

Nurses have an important role in identifying dysphagia patients. According to Travers, nurses are the professionals who are often present at the bedside, particularly at mealtime, and are the first members of the health care team to observe signs and symptoms of dysphagia.[3,4] Performing a complete nursing assessment including taking a diet history, checking oral hygiene and observing for cough while swallowing is key to providing early treatment and preventing aspiration pneumonia. Without effective diagnosis and treatment, dysphagia may lead to serious medical conditions such as pneumonia, dehydration and malnutrition.[5]

There are four (4) phases to swallowing: oral preparatory phase (though not all sources recognize this as a phase), oral, pharyngeal and esophageal.

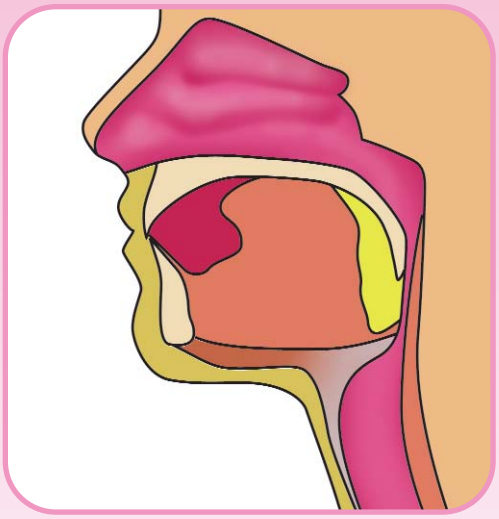
Pathogenesis of Swallowing[6]

1. Oral preparatory phase



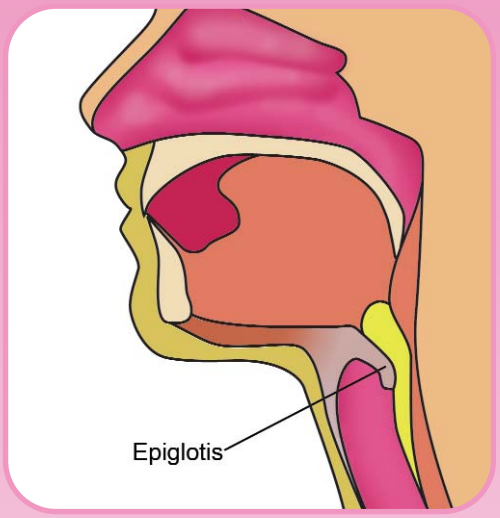
- Mastication
- Formation of bolus

2. Oral phase



- Tongue pushes food bolus from mouth to oropharynx
- Anterior tongue lifts to the hard palate and retracts in a posterior direction to force the bolus to the oropharynx
- Mylohyoid muscles lifts the posterior tongue, which also elevates the soft palate and seals the nasopharynx to prevent nasal aspiration
- Under voluntary control

3. Pharyngeal phase



- Bolus is advanced from the pharynx to the esophageal through peristalsis
- Soft palate is elevated to the posterior nasopharyngeal wall. The palatopharyngeal folds on each side of the pharynx are brought close together through the superior constrictor muscles, so that only a small bolus can pass
- Specific functions of pharygeal muscles
- Under involuntary control; uses skeletal muscle
- Oropharyngeal phase estimated to last < 1 second

4. Esophageal phase

- Upper esophageal sphincter relaxes to allow entry of bolus into esophagus
- Sphincter closes to prevent esophageal or pharyngeal regurgitation
- Lower esophageal sphincter relaxes to allow entrance of bolus into stomach
- Lower esophageal sphincter closes promptly to prevent reflux of gastric contents

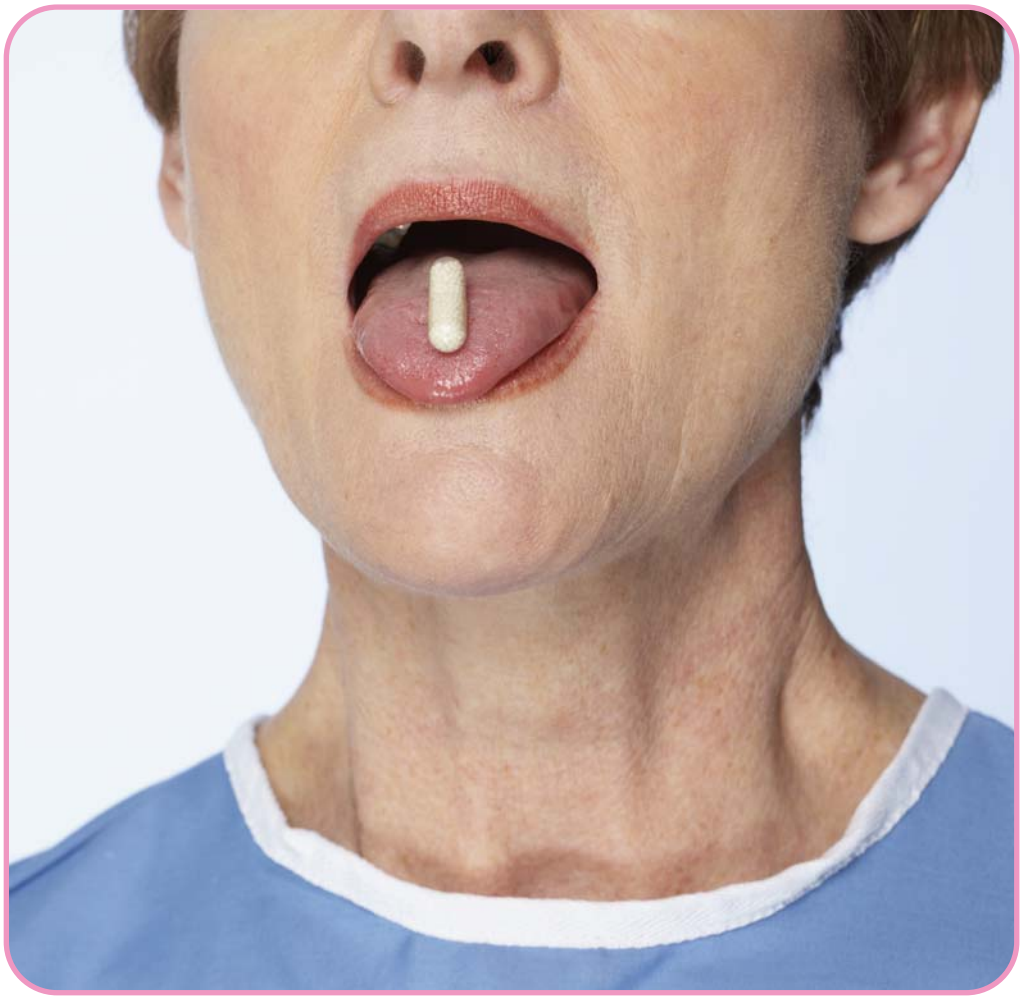
Aspiration
In patients who have difficulty swallowing, failing to swallow can lead to a build up of mucus, saliva or food in the throat or airways producing a death rattle, agonal respiration or aspiration.

Disruption of muscles involved, innervations or mechanical interference at any level can lead to dysphagia.[7]

Causes of dysphagia
Dysphagia is usually described in two ways, oropharyngeal and esophageal. *Oropharyngeal dysphagia* is difficulty initiating swallowing and or moving the bolus from the oral cavity into the esophagus. *Esophageal dysphagia* is defined as difficulty moving food through the esophagus. Patients who often complain of food being stuck in their throat is indicative of oropharyngeal dysphagia. They also have difficulty swallowing thin liquids, which results in choking or coughing. Strokes, Alzheimer's, Parkinson's disease, head and neck injuries or tumors may often be responsible for these symptoms. Health care providers can identify esophageal dysphagia in patients who complain of pain in the chest after swallowing. Esophagitis, strictures, achalasia and esophageal spasms are often the causes of these symptoms.[8] Dysphagia may stem from diseases intrinsic to the esophagus: motility disorders, webs, and rings diverticula, strictures, neoplasms, drug induced esophageal injury or a variety of systemic disorders that effect the esophagus. Systemic conditions that can affect the esophagus and cause dysphagia are scleroderma, mixed connective tissue disorders (systemic lupus erythematosus, systemic sclerosis and polymyositis), amyloidosis and autonomic neuropathy from diabetes, Parkinson's disease and myasthenia gravis. Elderly patients consume multiple medications and are highly susceptible to side effects, and therefore are likely to suffer from drug induced esophageal injury.[9]

Identifying symptoms
Nurses need to be aware of symptoms such as weight loss, loss of appetite, food sticking in the throat, choking on solid foods or liquids and recurrent chest infections. When assessing the patient, nurses should also include the onset, duration and severity of the swallowing problem.[10]

Evaluation
A comprehensive dysphagia evaluation should include several medical disciplines including surgery, medical oncology, radiation oncology, speech pathology, radiology and dietary. While each has a role to play, it is often the speech pathologist who conducts a clinical or instrumental assessment of swallowing function and makes recommendations for therapeutic interventions. A thorough examination begins with a clinical swallowing assessment that includes a detailed history of subjective complaints and medical status, pertinent clinical observations and a physical examination.[11] Many diagnostic tests are available for various types of dysphagia: flexible nasal endoscopy, x-ray with barium swallow, flexible endoscopy and videofluroscopy. Physicians and speech and language pathologists test for and treat swallowing disorders using a variety of tests that allow them to look at the parts of the swallowing mechanism.[12] A videofluorographic swallowing study is the gold standard for evaluating the swallowing mechanism. The videofluorographic swallowing study is similar to the modified barium swallow, except that the protocol for the modified barium swallow specifies quite small bolus volumes and does not include drinking from a cup. In practice, the terms "videofluorographic swallowing study" and "modified barium swallow" are often used interchangeably. In the case of esophageal dysphagia, where



the difficulty swallowing solid foods or mechanical obstruction is an issue, perform an esophagoscopy or barium esophagogram. If the dysphagia is neuromuscular in nature, the evaluation may be the same or manometry may be added.[13]

Management

There are several goals in swallowing rehabilitation. The primary goals are to prevent malnutrition and dehydration, and reduce the risk of aspiration. Another goal is to help patients remain compliant with complicated medication regimens. Re-establishment of safe and efficient oral intake, prevention of dysphagia prior to medical treatment, and patient education regarding the specifics of their disorder are also important goals of intervention.[11] Dietary modification, head positioning, swallowing techniques, conditioning exercises and special equipment are also available and make it easier for dysphagic patients to swallow safely and effectively.[13]

Medications that elderly patients use are often available in soluble liquid form. These include tamoxifen, ondansetron, metoclopramide and granisetron.

Xerostomia

Xerostomia is defined as dry mouth resulting from reduced or absent saliva flow. Xerostomia is not a disease, but it may be a symptom of various medical conditions, a side effect of radiation to the head and/or neck, a side effect from chemotherapy or a side effect from a wide variety of medications. It may or may not be associated with decreased salivary gland function. Xerostomia is a common complaint found often among older adults, affecting approximately 20% of the elderly. However, xerostomia does not appear to be related to age itself as much as it is related to the elderly taking medications that cause xerostomia as a side effect.[14]

Xerostomia is the most common side effect of irradiation for head and neck cancer, and the most important cause of reduced long term quality of life in survivors. Many patients experience dryness of the oral mucosa early in the course of treatment, because of the reduction in saliva as well as the change in its composition. If not properly managed, xerostomia can lead to progressive deterioration of the mucosa, teeth, gingiva, and mandible.[15] Xerostomia can also lead to oral mucositis, an inflammation of mucous membranes in the mouth also caused by cancer chemotherapy and radiation therapy. Saliva and mucus produced by the salivary glands protect the mucous membranes and teeth, lubricate the food bolus and facilitate eating and speaking. Saliva has additional protective roles in the regulation of acidity and in antimicrobial defense through the action of immunoglobulin and non-immunoglobulin glycoproteins. Glycoproteins reduce the adhesion of microorganisms to the oral mucosa and serve as a protective barrier for the superficial cells in the oral cavity. The

absence of the glycoproteins' protective properties renders the epithelial cells more vulnerable to irritation and trauma.[16]

Signs and symptoms

Aside from the sensation of dryness of mouth, xerostomia may result in:

- Saliva that seems thick, stringy
- Sores or split skin at the corners of your mouth
- Bad breath
- Difficulty speaking, swallowing
- Burning or tingling sensation of the tongue
- Altered sense of taste, increased plaque, tooth decay and gum disease[17]

Treatment

Many oral products can help relieve dry mouth and are available as over the counter saliva substitutes, saliva stimulants and dentifrices. A physician may prescribe oral electrolyte rinses containing calcium and phosphate, which restore mouth moisture and are effective at reducing the duration and severity of oral mucositis.[18] Other steps to take that may help improve saliva flow include:

- Sucking on sugar-free candy (non-citrus) or chewing sugar-free gum
- Protecting teeth by brushing with a fluoride toothpaste, using a fluoride rinse, and visiting the dentist regularly
- Breathing through nose, not mouth, as much as possible
- Using a room vaporizer to add moisture to the bedroom air[19]
- Drinking plenty of water to help keep mouth moist

Conclusion

Dysphagia patients who are at risk for aspiration can be identified and appropriate interventions applied to reduce morbidity from aspiration pneumonia.[1] Xerostomia is a common problem and if not recognized and treated, can have a significant effect on a patient's quality of life. Through proper education, assessment, prevention, referral and appropriate treatment, health care providers can help minimize xerostomia and its effect on dental health and quality of life.[14]

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Update on Systemic Hormonal Therapy

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Epidemiology

Like most cancers, breast cancer is a heterogeneous disease currently affecting one in eight American women. The age-specific incidence rises sharply between the ages of 40 and 50, and peaks around ages 75-79.[1] During the period 1998-2001, 95% of the new cases and 97% of breast cancer related deaths occurred in women over the age of 40. In 2007, there will be an estimated 178,480 new cases of female breast cancer and 40,460 estimated deaths.[2] Of these new cases of breast cancer, for women in their forties there will be 15 cases/1000 women. This number will increase to 43 cases/1000 in the seventy-year-old age group.[3] Almost one-half of the breast cancer incidences occur in women 65 and older.[4]

Therapeutic options

Therapeutic options for the treatment of breast cancer are based on a number of factors that take into account tumor size, number of positive nodes, estrogen and progesterone receptor status, and most recently the Her-2-neu status of the tumor. Age as well as other comorbidities must also be taken into account. Much of the controversy surrounding the optimum treatment for the elderly patient with breast cancer is due to a lack of randomized clinical trial data for women over the age of 70.[5]

Older women, many times simply because of age, but in other instances because of comorbidities and functional limitations, are often under-treated. As a whole, older women have more mastectomies, instead of lumpectomy and radiation therapy (XRT), compared to younger women. When they do have lumpectomies, many times they do not receive XRT. Some causes for receiving suboptimal therapies in women over 65 include prohibitive associated medical conditions, 40.9%; favorable tumor pathology, 13.6%; patient treatment refusal, 31.8%; and unexplained, 13.6%. Women under the age of 65 did not receive optimal treatment for the following reasons: prohibitive associated medical conditions, 27.8%; favorable tumor pathology, 16.7%; and patient treatment refusal, 55.6%.[6]

When considering therapy for breast cancer, women are divided into 2 groups: premenopausal or postmenopausal (in general, those women 50 years of age and older). The presence of estrogen receptors on tumors of the elderly has been determined to be as high as 90%.[7] For the past 30 years, the hormonal therapy tamoxifen has been used as adjuvant treatment for low risk post-menopausal women with positive estrogen and/or progesterone cancers. Tamoxifen as well as raloxifene (EVISTA®) are both SERMs, or selective estrogen receptor modulators. Quinquennial overviews, from 1985-2000, of randomized trials for early breast cancer have demonstrated that 5 years of tamoxifen reduced the annual recurrence rate at 15 years by 34% and 45% in women aged 50 to 59 and 60 to

69 respectively. The annual death rate was reduced by 24% and 35% in each of these groups.[8]

Another use for tamoxifen has been in the arena of chemoprevention. In the American Breast Cancer Prevention Trial (P-1 study), women at high risk for the development of breast cancer were randomized to either 5 years of tamoxifen or placebo. Women were eligible if they were over 60, or if between the ages of 35 and 59, if they had a five-year risk of developing breast cancer equal to or greater than 1.66 based on the Gail model. They were also eligible if they were 35 years or older if they had a history of lobular carcinoma in situ. After 7 years of follow-up, the following results were obtained: tamoxifen decreased the relative risk of invasive breast cancer by 43% and the risk of noninvasive breast cancer (ductal and lobular carcinoma in situ) by 37%.[9]

"Older women, many times simply because of age, but in other instances because of comorbidities and functional limitations, are often under-treated."

It has been over 100 years since Beatson's first insights into the estrogen dependent nature of breast cancer. He noted that breast cancers regressed following oophorectomy. Newer agents are now available which will inhibit the action of estrogen though through a different mechanism than tamoxifen. These agents are known as aromatase inhibitors (AIs). These are medications that inhibit aromatase, the enzyme that converts androgen substrates to estrogen. The first generation AI was aminoglutethimide and it was reserved for end-stage metastatic disease. The newest AIs include exemestane (AROMASIN®), anastrozole (ARIMIDEX®) and letrozole (FEMARA®).

It is well-known that AIs are ineffective in premenopausal women, but there is great ongoing debate as to which hormonal therapy is the most effective for the postmenopausal individual. Also not known are the benefits of using single agents versus combinations of tamoxifen and AIs. In addition, the optimal duration of therapy is still under study.

Five randomized trials have explored AIs in the adjuvant setting. The first major study (ATAC) looked at five years of anastrozole or tamoxifen, alone or in combination. First of all, there was no advantage to the combination and the anastrozole group showed a significantly longer disease-free survival, a prolonged time to recurrence and reduced distant metastasis. There was no difference in overall survival.[10] Other trials suggest there is a benefit to using tamoxifen sequentially with an AI. It has been shown that 5 years of tamoxifen followed by 5 years of an AI (in this case letrozole) yielded a significant improvement in disease-free survival.[11] Another study looked at 2 to 3 years of tamoxifen followed by exemestane for the duration of the 5 years. This study also showed an improvement in disease-free survival but no difference in over-all survival.[12] Let's take a closer look at available hormonal therapies.

Systemic hormonal therapy in breast cancer

Again, when considering systemic hormonal therapy in breast cancer, the practitioner must evaluate a variety of patient parameters, including but not limited to; (a) if the intended therapies are for the prevention of breast cancer in at risk patients or for treatment; (b) the patient's pre- or postmenopausal status; (c) the type and stage of cancer; (d) the patient's pre- or post-surgical or radiation treatment status; and (e) other comorbidities. All of these factors play a role in determining the type and timing of adjuvant hormonal therapy.

Given the importance of patient-caregiver communication as discussed in other articles within this newsletter, it is imperative that health care providers ensure patients understand adjuvant hormonal therapy is not hormone replacement therapy (HRT). The National Comprehensive Cancer Network (NCCN) recommends against the use of HRT for women taking tamoxifen or raloxifene outside of a clinical trial.[13]

Selective estrogen receptor modulators (SERMs)

Tamoxifen[14]

Tamoxifen is a nonsteroidal antiestrogen that competes with estrogen for binding sites in target tissues such as breast. It is extensively metabolized after oral administration with fecal excretion as the primary route of elimination.

Tamoxifen is indicated for use in the treatment of metastatic breast cancer in women and men; as an alternative to oopherectomy or ovarian irradiation in premenopausal women with metastatic breast cancer; for the treatment of node-positive breast cancer in post-menopausal women following total mastectomy, axillary dissection and breast irradiation; for the treatment of axillary node-negative breast cancer in women following total mastectomy or segmental mastectomy, axillary dissection and breast irradiation; to reduce the risk of invasive breast cancer in women with ductal carcinoma in situ (DCIS) following breast surgery and radiation; and to reduce the incidence of breast cancer in women at high risk for breast cancer.

For patients with breast cancer, the recommended dose is 20 mg daily. For patients with DCIS and for the reduction of breast cancer in women at high risk, the recommended dose is 20 mg daily for 5 years.

Tamoxifen carries a Black Box Warning for women with DCIS and women at high risk for breast cancer due to serious and life-threatening events such as uterine malignancies, stroke and pulmonary embolism. Health care providers should discuss the potential benefits versus the potential risks of these serious events

with this patient population who are considering tamoxifen treatment to reduce their risk of developing breast cancer. The benefits of tamoxifen

outweigh its risks in women already diagnosed with breast cancer.

Tamoxifen is available in both oral tablet and oral solution formulation. SOLTAMOX®, a 10 mg/5 mL tamoxifen citrate oral solution, may assist health care practitioners in addressing medication adherence issues in patients with difficulty swallowing. The need for an oral solution for the treatment of breast cancer arose from the fact that dysphagia and xerostomia are complicating factors that lead to noncompliance or issues with adherence concerning medical treatment. One of the frequent side effects of polypharmacy is the unrecognized occurrence of dry mouth as the result of the medications alone, as 80% of the most commonly prescribed drugs cause dry mouth. Xerostomia affects approximately 30% of the elderly population.[15] As the number of comorbid conditions increases, the chance of non-adherence also increases. In the elderly, with conditions such as diabetes, scleroderma, collagen vascular diseases and congestive heart failure with its resultant dyspnea and fatigue, noncompliance will always be a concern. This is a major issue in the treatment of breast cancer, as long-term follow up from a study on tamoxifen compliance showed that at 4 years the average rate of adherence was only 50%.[16] A liquid formulation of tamoxifen should help increase the rate of compliance.

Raloxifene (EVISTA® - Eli Lilly)[17]
Raloxifene is a selective estrogen receptor modulator that belongs to the benzothiophene class of compounds. Its mechanism of action is mediated through binding to estrogen receptors which results in activation of certain estrogenic pathways and blockade of others. Raloxifene is absorbed rapidly after oral administration, undergoes extensive first-pass metabolism and is primarily eliminated fecally. It is available as a 60 mg tablet for oral administration and can be administered without regard to meals.

While raloxifene is indicated for the treatment and prevention of osteoporosis in postmenopausal women, the NCCN 2007 Breast Cancer Clinical Practice Guidelines, based on the National Surgical Adjuvant Breast and Bowel Project (NSABP) Study of Tamoxifen and Raloxifene (STAR) trial, have added raloxifene as an option for reducing the risk of invasive breast cancer in postmenopausal women with lobular carcinoma in situ.[18]

Toremifene (FARESTON® - Orion)[19]
Toremifene is a nonsteroidal, triphenylethylene antiestrogen, available as toremifene citrate tablets for oral administration. Each tablet contains the equivalent of 60 mg toremifene. Toremifene binds to estrogen receptors and may exert estrogenic, antiestrogenic or both activities. The antitumor effect of toremifene in breast cancer is believed to be mainly due to its antiestrogenic effects, ie, its ability to compete with estrogen for binding sites in the cancer, blocking the growth-stimulating effects of estrogen in the tumor. Toremifene is well absorbed after oral administration and its absorption is not affected by food. It is extensively metabolized in the liver and is eliminated as metabolites in the feces, with about 10% excreted in the urine.

Toremifene is indicated for the treatment of metastatic breast cancer in postmenopausal women with estrogen-receptor positive or unknown tumors. The recommended dose is 60 mg, once daily. Treatment is generally continued until disease progression is observed.

Aromatase inhibitors
Aromatase inhibitors are not active in the treatment of women with functioning ovaries and should therefore not be used in women with intact ovarian function. While it is difficult to assess ovarian function in patients experiencing treatment-induced amenorrhea, re-evaluation should be conducted periodically (NCCN Breast Cancer Guideline).

Anastrozole (ARIMIDEX® - AstraZeneca)[20]
Anastrozole is a nonsteroidal aromatase inhibitor that significantly lowers serum estradiol levels. Aromatase converts androstenedione to estrone in peripheral tissues, such as adipose tissue. Aromatase inhibition blocks this conversion with subsequent reduction in estradiol production from estrone.

Anastrozole is well absorbed after oral administration and absorption is not affected by food. It is extensively metabolized with 10% of the dose excreted unchanged in the urine and about 60% excreted in the urine as metabolites; hepatic metabolism accounts for approximately 85% of anastrozole elimination.

Anastrozole is indicated for: adjuvant treatment of postmenopausal women with hormone-receptor-positive early breast cancer; first-line treatment of postmenopausal women with hormone-receptor-positive or hormone receptor unknown locally advanced or metastatic breast cancer; and for the treatment of advanced breast cancer in postmenopausal women with disease progression following tamoxifen therapy. It is not recommended for use in premenopausal women. Also, anastrozole can cause fetal harm when administered to a pregnant woman (Pregnancy Category D).

The dose of anastrozole is 1 mg daily. For patients with advanced breast cancer, therapy should be continued until tumor

progression. For adjuvant treatment of early breast cancer in postmenopausal women, the optimal duration of therapy is unknown.

Letrozole (FEMARA® - Novartis)[21]
Letrozole is a nonsteroidal, competitive aromatase inhibitor available as 2.5 mg tablets for oral administration. Letrozole inhibits the aromatase enzyme by competitively binding to the heme of the cytochrome P450 subunit of the enzyme, resulting in a reduction of estrogen biosynthesis in all tissues. Treatment of women with letrozole significantly lowers serum estrone, estradiol and estrone sulfate.

Letrozole is rapidly and completely absorbed after oral administration and absorption is not affected by food. Renal excretion is the major clearance pathway. It is indicated for the adjuvant treatment of postmenopausal women with hormone receptor positive early breast cancer; for the extended adjuvant treatment of early breast cancer in postmenopausal women who have received 5 years of adjuvant tamoxifen therapy; for first-line treatment of postmenopausal women with hormone receptor positive or hormone receptor unknown locally advanced or metastatic breast cancer; and for the treatment of advanced breast cancer in postmenopausal women with disease progression following antiestrogen therapy. It is contraindicated in premenopausal women. The recommended dose is 2.5 mg orally administered once daily without regard to meals. In patients with advanced disease, treatment with letrozole should continue until tumor progression is evident.

Exemestane (AROMASIN® - Pfizer)[22]
Exemestane is an irreversible, steroidal aromatase inactivator. It acts as a false substrate for the aromatase enzyme, and is processed to an intermediate that binds irreversibly to the active site of the enzyme causing its inactivation. It is rapidly absorbed following oral administration and is distributed extensively into tissues.

Exemestane is indicated for adjuvant treatment of postmenopausal women with estrogen-receptor positive early breast cancer who have received 2 to 3 years of tamoxifen and are switched to exemestane for completion of a total of 5 consecutive years of adjuvant hormonal therapy. It is also indicated for the treatment of advanced breast cancer in postmenopausal women whose disease has progressed following tamoxifen therapy. The recommended dose in early and advanced breast cancer is 25 mg once daily following a meal. The dose should be increased to 50 mg once daily if the patient is also receiving a potent CYP 3A4 inducer, such as rifampin or phenytoin.

Estrogen Receptor Down-Regulators
Fulvestrant (FASLODEX® - AstraZeneca)[23]
Fulvestrant injection for intramuscular administration is an estrogen receptor antagonist that binds to the estrogen receptor in a competitive manner with affinity comparable to that of estradiol. Fulvestrant downregulates the ER protein in human breast cancer cells. After an intramuscular injection, plasma concentrations are maximal at about 7 days and are maintained over a period of at least one month. The apparent half-life is about 40 days.

Fulvestrant is indicated for the treatment of hormone receptor positive metastatic

breast cancer in postmenopausal women with disease progression following antiestrogen therapy. The recommended dose is 250 mg administered intramuscularly into the buttock at intervals of one month. The injection should be administered slowly.

Conclusion
The treatment and prevention of breast cancer is a complicated, multifactorial, multidisciplinary process. Patients must be involved in the treatment decision making process to the fullest extent possible. All health care professionals dedicated to the care and treatment of patients with this devastating disease are encouraged to remain abreast of current therapies and therapeutic options.

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Methods for Improving Patient-Provider Communication

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Communication is an essential component of the patient-provider relationship. Good communication has been shown to increase the opportunity for providers to make accurate, timely diagnoses and to enhance patient compliance with treatment regimens. Additionally, good communication usually results in improved patient satisfaction and outcomes.[1] Alternatively, poor communication has been shown to result in increased patient anxiety as well as decreased job satisfaction and increased stress for providers.[2] When communication is seen as good, the patient feels affirmed in interactions with the provider and is generally comfortable asking questions, providing information, and collaborating with treatment choices, side effect management, and other healthcare-related decisions. Conversely, when patients feel communication is poor, there frequently is decreased satisfaction with care, increased unwillingness to share information, and decreased access to and use of resources that could affect quality of life and disease outcomes.[1,3-5]

Communication: Processes and components

According to Eggly, health communication occurs on many levels, each of which influences the other. Individuals learn about health and health-related issues at the level of culture and society, in small groups, in interpersonal relationships and at the personal level.[6] At the level of culture and society, people learn about health issues through the media, the internet and in the cultural mores of racial, ethnic and similar groups. At the small group level, they learn about health issues through interactions with their families and through experiences where they work and play; while at the interpersonal level, individuals talk about their health and health-related issues with their loved ones, friends and health care providers. Finally, at the individual level, people have their own personalities and experiences through which they filter their knowledge and beliefs about health and how they wish to receive care.

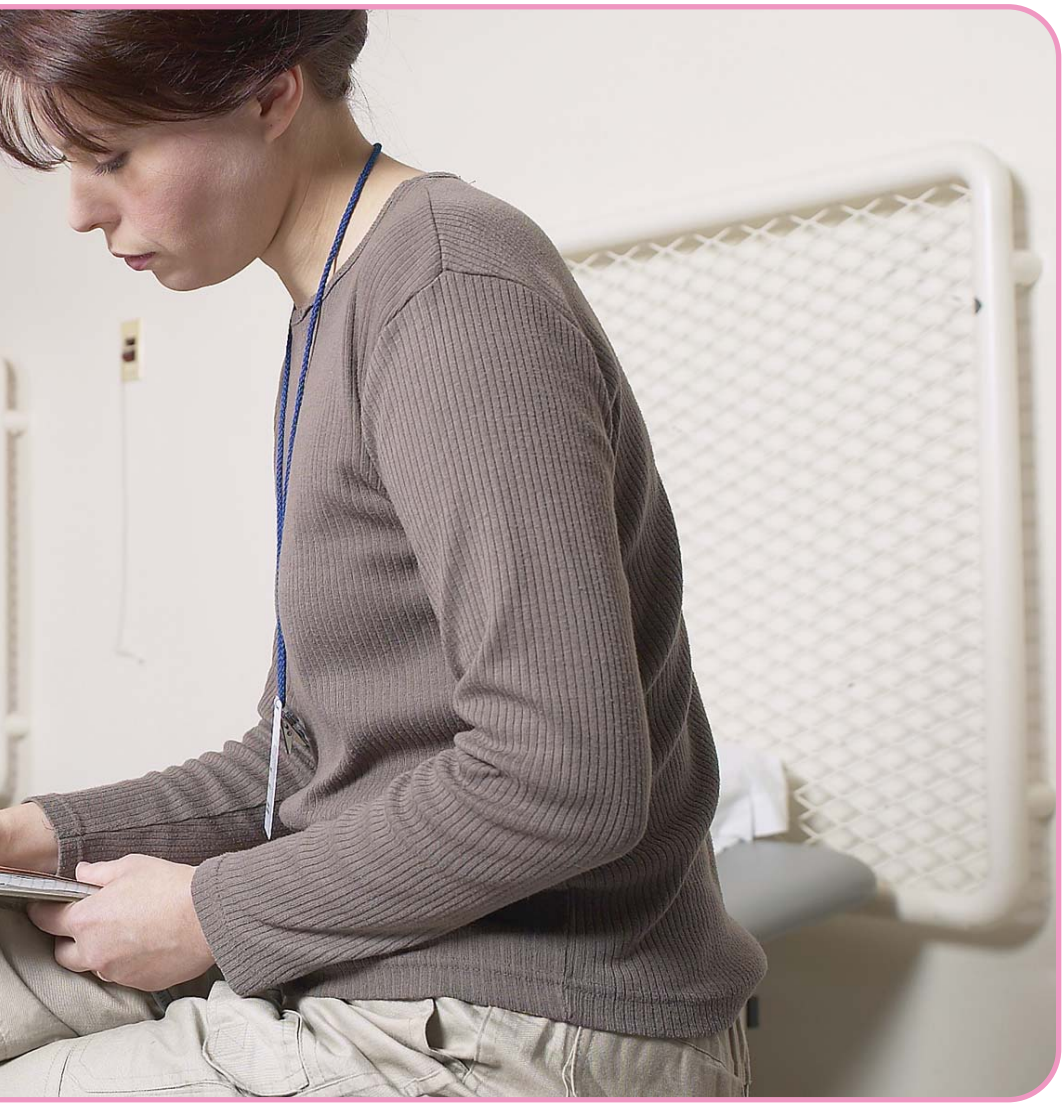
Communication includes both verbal (what the patient says) and non-verbal (how the patient looks and acts during an interaction) components. It is believed that approximately 80% of communication is non-verbal; thus, it is essential to listen to the words being said, and to take in and process how the patient looks and acts during and after an interaction. The way in which the patient holds his/her body, whether the interaction is animated or listless or if words match posture, facial expressions or gestures, can cue the provider to how the patient is really feeling or reacting to what is being communicated. For example, if the patient uses a flat tone of voice while stating that all is going very well with minimal side effects to cancer treatment,

the provider should probe further to find out why affect or tone and words do not match.[1]

Congruence between verbal and non-verbal communication can be affected by cultural mores that must be taken into consideration when assessing the quality of an interaction. For some cultures, making direct eye contact is considered rude and taking long pauses before speaking, to assure the other speaker has finished, are the norm. However, for many in western white cultures, making eye contact is a sign of interest in the conversation and interrupting, or least minimizing silence, is the norm. Overlooking non-verbal communication in the overall assessment of an interaction may lead the provider to believe that the patient has understood or agrees with what is being discussed, when the opposite is true and could have been identified by evaluating non-verbal cues.

Barriers to communication

There are multiple barriers to good communication. These include provider issues, patient and family issues, cultural implications and various levels of team communication and conflict. Providers frequently are constrained by time and the need to evaluate a specific problem within minutes and then move on to the next patient. Making time for answering questions, listening to concerns and making a collaborative treatment plan, may be difficult for providers who hear complaints about keeping patients waiting or the need to see a specific number of patients on any given day. Creating a climate where communication is possible is essential, even when time is short. This can occur through affirming patient questions and responses and communicating a sense of respect and involvement.[3,4,7]



Patients and families may contribute to poor communication through such barriers as interpersonal or interfamily patterns of communication; their own fears about discussing concerns about diagnosis, prognosis and treatment with providers and their cultural beliefs about the role of physicians and treatment decision-making. Patients and families do not necessarily communicate well and these patterns of communication can be transferred to interactions with providers. Additionally, cultural beliefs, literacy levels, religious convictions and age and gender issues can affect communication for patients, families and providers.[3,4]

Many believe that a decreased ability to read, hear and/or comprehend automatically comes with advancing age. This may mean that providers inadvertently dismiss some interactions with the elderly, speak in too simple terms, use diminutives, such as, “sweetie” or “honey” to address elders and attempt to coerce decisions rather than educate the elder and allow for informed decision making. While it is important to communicate at the level needed by the elder based on health status, assuming that the elder is unable to comprehend general health-related materials or make informed choices is generally inaccurate.[8]

Strategies for enhancing communication
Multiple strategies can facilitate communication between patient (and family) and provider (See Table 1.). Many strategies are beneficial for good communication regardless of age, gender or cultural differences, while some are specifically helpful when working with the elderly (See Table 2.). Additionally, developing materials for those with diminished eyesight, reading ability and/or cognition is essential to assure the patient is appropriately educated about treatment options, potential symptoms and side effect management and to improve compliance with prescribed treatments (See Table 3.).

Table 1: Strategies to Enhance Communication with the Elderly[4,8-12]

Communication Style	
Use	**Don't Use**
Slow, clear speech (but not too slowly)	Nurturing style (overly intimate; use of baby talk or "we" instead of "you")
Lower pitch and slightly louder voice	Directive style (under-recognition of patient's autonomy; very controlling)
Common language	Diminutives such as sweetie, honey
Cues from non-verbal behaviors	Complex medical terminology
Style that stays focused on the topic to elicit desired/needed information	First names without permission
Positive affect, conveying a caring, interested and respectful attitude	
Interactions/Providing Instructions or Education	
Be present (listen; use intuition and empathy)	
Face patient so she or he can see your lips	
Encourage questions, especially open-ended questions that do not imply/ suggest an answer	
Affirm patient's active participation in the discussion	
Use "goal-driven" discussions (try to elicit specific information such as symptoms)	
Give time for patient to respond (without interrupting thoughts or comments)	
Allow silence without the need to fill all lapses in communication	
Tailor education to patient's learning style	
Be aware of race/ethnicity/cultural influences that may alter interactions	
Be prepared (consider potential outcomes, emotions, meanings of words)	
Use benchmarking (common ability, hobby or activity such as walking a golf course) to measure changes in side effects over time	
Be sure you are aware of what the patient/family know and want to know about disease, treatment, side effects, etc.	
Be aware of the meaning and consequences of the words used in the interaction	
Answer questions directly	
Be sure to talk with, not at, the patient/family	

"Good communication has been shown to increase the opportunity for providers to make accurate, timely diagnoses and to enhance patient compliance with treatment regimens."

Table 2: Suggestions to Help Patients or Families Overcome Barriers to Good Communication

Encourage the patient to:	Encourage the family to:
Keep a pad/pen to jot down questions to ask	Select one person to hear discussions and communicate to other family members
Submit questions in advance of appointment	Support the patient in his/her decision
Tape-record conversations to review later (with permission)	Come with patient to appointments (as desired by the patient)
Bring another person to the appointment to hear the discussion; review each person's perceptions	Facilitate clarification of unclear issues and personal concerns
Be involved in treatment/care decisions as desired	
Involve family in decision-making as appropriate	
Practice asking questions	

Table 3: Strategies for Creating Educational Materials for Use with the Elderly

Use large, bold, dark lettering on light paper[12]
Use vignettes[9]/narratives
Use pictures
Include "white space;" minimize clutter
Keep materials short and focused on the topic[12]
Keep reading level between 4th and 6th grade
Use literacy tools on individual paragraphs rather than entire document to accurately assess reading level of material

Conclusion

Communication is a multifaceted process that becomes even more complex when one is interacting with the elderly who may have hearing, speech, literacy and cognition difficulties. It is essential for the provider to assess communication and to facilitate a clear understanding of disease and treatment-related decisions and of the psychological and emotional concerns that may affect good communication. Identifying what the patient knows, wants to know and how she or he best prefers to communicate is crucial. Treating the elderly patient with respect and a belief that the patient is capable of making an informed decision about care should guide the communication process with the end goal of assuring quality communication and quality cancer care.

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Interview: Dietary and Nutrition Concerns

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What are the frequently encountered nutritional issues or deficiencies in elderly patients with breast cancer?
The first thing I would think of is vitamin D. Nearly everyone in this population is deficient or at least low in this nutrient. There is such a large and accumulating body of evidence on low serum vitamin D and both risk of cancer and survival after diagnosis. Vitamin D is really cheap too, so it's not a big burden to take it. Another problem commonly seen in this population is dysgeusia.

Women are more likely to be more frail than men. Identifying the frail can help to predict falls, deteriorating, mobility, disability, hospitalization and death. Frailty is associated with cardiovascular disease, low education and low income. Vitamin E supplementation has been of interest in the elderly because it is an antioxidant and it is known to decrease PGE-2 and increase IL-2.

Several micronutrient alterations are more common in the elderly. Vitamin B12 status can be low due to atrophic gastritis. Lack of sun exposure and impaired cutaneous synthesis can lower vitamin D levels. Elevated vitamin A in plasma and hepatic stores can occur in the elderly, partially due to a decrease in renal degradation. Recommendations for these issues are:

Vitamin B12 may need to be increased in patients with gastritis; vitamin D may need to be increased from the RDI of 5 mcg (200 IU) to 10 mcg (400 IU) in homebound or institutionalized elderly.

Individuals taking vitamin supplements may be at risk for vitamin A toxicity; Chronic vitaminosis A may lead to liver abnormalities and bone changes such as bone mineral loss and possibly spine or hip fractures.

Dehydration is the most common fluid/electrolyte disorder in the elderly in long term care facilities and community dwellings.

Calcium loss contributes to bone fragility.

Elderly people suffer from malnutrition. Some reasons are decreased appetite, impaired digestion, decreased absorption, impaired glucose tolerance and effects of drugs. In general, elderly patient's diets are often deficient in protein and fiber.

Nutrition-related side effects that may occur during treatment for breast cancer include:

Vomiting	Loss of appetite
Diarrhea	Mouth sores
Heartburn	Thrush
Constipation	Xerostomia
Fatigue	Nausea
Weight gain	Weight loss

Narrowing of the esophagus is a nutrition-related side effect that may occur more than 90 days after treatment. Side effects typically start around the second or third week of treatment and peak about two-thirds of the way through treatment. After radiation therapy ends, most side effects last 2 to 3 more weeks, although some may last longer.

Does a patient's age impact the choice or potential success of a nutritional intervention?
Yes. Risk factors for dehydration include deterioration in cognitive status or abilities, failure to eat or take medications, urinary tract infection within the last 30 days, fever, vomiting, or diarrhea, weight loss (> 5% over 30 days or > 10% over 180 days), leaving > 25% of food uneaten at meals, use of laxative or diuretics, uncontrolled dental management and swallowing problems.

Taste for salt disappears first, sweet next, leaving bitter.

The best-made denture cannot be tolerated by dehydrated fragile tissues in an excessively dry mouth.

TMJ is a result of masticating food for years, bruxism and attrition. Denture tolerance in the elderly is markedly reduced for the pain threshold of soft tissue changes markedly after the menopausal period.

Salivary glands diminish in their function. Abnormal taste and burning sensation are related to low estrogen and vitamin B complex deficiencies. A major reason for denture failure in the elderly patient is deficient tissue tolerance resulting from inadequate nutrition. This is tough. It depends on physical function, motivation and supports networks. The nutritional intervention can be successful, as this group tends to follow it well.

What cultural issues can you think of that will impact these nutritional issues?
Food choices that a patient is familiar with have to be considered but then it's a matter of modifying them and finding ways to increase the calories and protein using them. I don't really see it as a positive or negative.

How do comorbidities influence the outcome?
Many of these patients often have preexisting conditions such as diabetes and cardiovascular disease.

Women are usually well nourished at diagnosis. The elderly patient population can easily have more than two comorbidities like CHF, hypertension, diabetes, and end stage renal disease. Comorbid conditions complicate the issues of cancer management in older people. Both the conditions themselves as well as treatments for them can masquerade as or influence cancer-related concerns. Additionally, polypharmacy is often a significant risk in the face of multiple conditions. Finally, many older people may attribute symptoms and signs to one condition or another and this attribution may or may not be correct. As a result, older people may delay help seeking or dismiss what they believe to be non-consequential or benign processes as they may not connect a particular symptom or sign to cancer.

How does the cause of the dysphagia affect the choice of a nutritional intervention?

If the dysphagia is severe and related to Parkinson's disease or stroke, the patient may need tube feeds. Bulky disease creating constriction may be treated with surgical dilation.

Mucositis:

- Prevention is key–good oral hygiene with frequent mouth rinses is important (avoid alcohol-based mouth rinses).
- Treat oral lesions pharmacologically as appropriate (antifungal meds if needed).
- Consider using oral topical agents and anesthetics such as viscous lidocaine and institution specific mouth rinses that are combinations of nystatin, Maalox®, diphenhydramine, hydrocortisone, viscous lidocaine.
- Adjust texture and/or temperature as tolerated.
- Avoid carbonated beverages.
- Avoid caffeine, alcohol and tobacco products.
- Avoid other irritants (acidic, spicy foods).
- Try ice chips prior to and during bolus infusion of 5-FU as this causes vaso constriction in oral mucosa and may minimize mucosal damage.
- Try oral glutamine supplementation optimal dose is 10 gms TID.
- Consider feeding tube if unable to obtain adequate nourishment orally.

Patients with dysphagia may also benefits from texture modification of foods such as softening or pureeing foods. These patients may also benefit from an oral nutrition supplement such as Boost®, Prosure®, or Resurgex®.

How do you handle patients with xerostomia and oral mucositis?

Artificial saliva like Salivart® sometimes works in patients. Caphosol®, an advanced electrolyte solution containing phosphate and calcium, is also an effective treatment for xerostomia and has been clinically proven to reduce the duration and severity of oral mucositis. If a patient has natural teeth, the use of a daily application of sodium or stannous fluoride is certainly indicated. Keeping the mouth moist is very important to provide comfort and to prevent inflammation. Also the use of an

alcohol free toothpaste and mouthwash such as Biotene® can be helpful.

- Try tart foods to stimulate saliva.
- Sip on liquids or suck on ice chips throughout the day.
- Avoid caffeine, alcohol and tobacco products.
- Try using a cool mist humidifier at bedtime.
- Try drinking through a straw.
- Rinse mouth frequently with mild saline solution.
- Add extra sauces and gravies to foods.

When are you typically called in to consult with a patient? Who is it that refers the patients to you?
The physician, nurse or family often refers patients to the RD.

Is there a prevailing belief that these patients should just "grin and bear it"? That is, there in nothing to be done except get through it?
There is always hope. Individuals with cancer often feel out of control after they have received a cancer diagnosis and during treatment; their nutritional needs are an aspect of care over which they still have some control.

Do you find that the elderly patient is more likely to take the advice from a friend?
Yes. If it is a "modern," updated and/or educated elderly patient they may be more likely to gather all kinds of information from friends, family and/or internet resources. My educational strategy would focus on "what works best for other patients" and "the research shows..."

If the elderly patient is more traditional, they are more likely to follow the advice of a "professional," such as a doctor. I think it is important for the physicians to underscore the nutrition goal with this population. We can get much further with behavior change.

What kinds of assistance do these patients (or caregivers) request?
Patients request meal preparation, food shopping, financial assistance, medication reimbursement and adaptive equipment in handicap situations.

How does limited social support impact the choice of intervention, potential success or failure?
Patients may be depressed and not want to eat alone. They may delay diagnosis or treatment. As these dysphagic elderly patients sometimes have little or no social support at home, they are reluctant to try most interventions by themselves, as many are also depressed. If they are alone, they may worry about choking. Many are used to cooking for a family rather than one person, and may resist cooking for one, but may just resort to drinking a liquid diet. I try to increase social support, especially for these patients, by referring them to outside feeding organizations and social work. I would also recommend to patients that live further away to try Meals on Wheels®, talking to a church group for the possibility of potlucks or visiting, or attending meals at a congregate feeding center to increase outside social support. I would say that social support is a fairly critical component of a successful intervention.

"There is always hope. Individuals with cancer often feel out of control.... their nutritional needs are an aspect of care over which they still have some control."

Final thoughts
I have seen a few people with different problems: mucositis from chemo, GERD from all the stress; deconditioning from the multiple treatments and candidiasis. There is no direct correlation between the dysphagia and breast cancer unless the patient had a wide field of radiation which may have hit the esophageal area. Otherwise, the relationship is most likely related to the aging process and/or other physiological issues. Specific nutrition interventions for dysphagia:

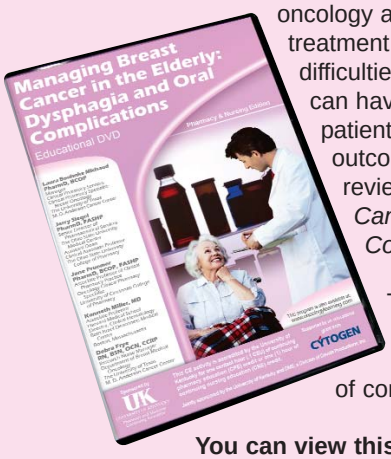
- Modify diet consistency and follow swallowing techniques provided by the speech pathologist.
- Eat softer, moist or pureed foods.
- Use commercially available food thickeners, tapioca, instant mashed potatoes or infant rice cereal to thicken liquids.
- Avoid breads, cakes, dry cookies and crackers unless taken with plenty of liquids.

New Accredited Video Available Online

www.oncologylearning.com

Watch

Managing Breast Cancer in the Elderly: Dysphagia and Oral Complications



In this educational video, you will learn from leaders in pharmacy and oncology and you will gain an enhanced understanding of treatment complexities in the elderly. You will also learn how difficulties in something as simple as swallowing (dysphagia) can have serious medical complications, and how effective patient-caregiver communication is essential to successful outcomes. There is much to be done, so let's start by reviewing this important program, *Managing Breast Cancer in the Elderly: Dysphagia and Oral Complications.*

This CE activity is accredited by the University of Kentucky for one hour (.1 CEU) of continuing pharmacy education (CPE) credit or one (1) hour of continuing nursing education (CNE) credit.

You can view this video at www.oncologylearning.com

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