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# Psychiatric and Psychosocial Issues

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Central nervous system (CNS) cancer, including primary brain tumors, CNS metastases, and nonmetastatic effects of cancer on the CNS, often has serious psychiatric and psychosocial consequences for the patient and for caregivers (Passik and Ricketts, 1998). The psychiatric impact of CNS cancer and associated treatment is unique because of direct effects on the brain and, thus, on mind, personality, memory, and self-concept. Patients often experience dramatic changes in mood and cognition, as well as decreased ability to function independently. Patients and family members are often unprepared for the neurologic sequelae of systemic cancer (Patchell and Posner, 1989). The same is true of behavioral consequences of primary or metastatic CNS cancer, possibly because of associated stigma or because of difficulties interpreting implications of the clinical presentations. The social impact of these diseases affect the spouse or significant other, as well as family members and caregivers, all of whom may be called on to provide a greater level of support than is typically required for cancer patients. Understanding the psychiatric and psychosocial impacts of neuro-oncologic illnesses on patients, families, and healthcare providers is essential to effectively treat cancer in this setting. Comprehensive treatment of CNS cancer entails use of appropriate psychopharmacologic, psychotherapeutic, cognitive, and behavioral interventions for the patient, as well as group and individual interventions for caregivers and staff.

The psychiatric and psychosocial effects of CNS cancer may be modest or subtle in initial stages of involvement. Long-term sequelae are often complex and severe. Patients are particularly vulnerable to such difficulties because a progressive disease course is generally characterized by an incipient cognitive and functional decline, along with multiple neurologic deficits. Coping with issues such as loss of independence is made more difficult by the effects of organic mental syndromes, including delirium, dementia, and mood disorders. Because most forms of CNS cancer have a poor prognosis, grief and mourning are central issues for the patient and close supporters (Passik et al., 1994).

We describe in this chapter the common psychiatric disorders (and some uncommon neuropsychiatric syndromes) encountered in neuro-oncology, as well as psychosocial problems facing patients and caregivers. Psychopharmacologic and psychotherapeutic interventions for the patient are discussed, as are individual and group psychotherapeutic interventions for caregivers and staff. In all cases, the intent is to improve quality of life, palliate distressing symptoms, and minimize adverse effects on treatment or end-of-life care.

## PREVALENCE OF PSYCHIATRIC DISORDERS AND PSYCHOSOCIAL ISSUES IN ONCOLOGY AND NEURO-ONCOLOGY

Cancer patients in general are at high risk for psychiatric disorders. In a major epidemiologic study of mental disorders in cancer, almost 50% of randomly assessed outpatients and inpatients had psychiatric disorders detectable by standardized interview, using

DSM-III criteria (Derogatis et al., 1983). Adjustment disorders (with anxious and/or depressed features) and major depression accounted for the majority of these diagnoses (68% and 13%, respectively). Organic mental syndromes (including delirium and dementia) accounted for 8% of the detected disorders. Adjustment disorders by definition are psychological reactions with symptomatology severe enough to interfere with daily function. Depending on the criteria used, the rate of major depression detected by Derogatis and colleagues (1983) is perhaps twice as prevalent as in the general population. The rate of detected psychiatric disorders in cancer patients may be expected to increase for at least two reasons. First, with greater importance assigned to quality of life as a valid treatment endpoint, more attention is being directed at specific ways to detect and treat psychological and psychosocial distress at all points in the disease process. Second, as the American population ages, a higher percentage of individuals vulnerable to cancer will also be at risk for psychiatric disorders associated with increased age (e.g., dementia, delirium).

Patients with CNS cancer are at even higher risk of behavioral difficulties because of direct effects of disease on the brain and direct and indirect effects of cancer therapies. However, the actual prevalence of psychiatric disorders in neuro-oncology patients is unknown. Large studies from the first half of the twentieth century report psychiatric symptoms in 50% to 80% of brain tumor patients who came to autopsy (Price et al., 1997). Massie et al. (1991) reviewed the psychiatric diagnoses of patients admitted to the neuro-oncology service at the Memorial Sloan–Kettering Cancer Center and referred for psychiatric consultation. In this sample, 41% of patients had organic mental disorders, 11% had major depression, and 26% had adjustment disorders.

## NEUROPSYCHIATRIC EFFECTS OF CANCER IN THE CENTRAL NERVOUS SYSTEM

Cancer in the CNS (and its treatment) has been associated with myriad neurobehavioral symptoms and disorders. The literature abounds with case reports and small series of unusual presentations of cognitive, perceptual, personality, and mood disorders associated with brain tumors (Manes and Robinson, 2000; Lishman, 1998a) and paraneoplastic syndromes (Dropcho, 1998; Lishman, 1998b). As mentioned, initial behavioral presentations of CNS malignancy can be subtle. Most often they will be accompanied by frank neurologic signs and symptoms (e.g., headache, nausea, seizures). However, behavioral or mood disturbance alone may be the first indication of the presence of a brain tumor or other cancer in the nervous system (Manes and Robinson, 2000).

In the case of brain tumors, lesion location and its relationship to particular behavioral syndromes has received considerable attention (Lishman, 1998a; Price et al., 1997). Before the availability of neuroimaging as the primary diagnostic modality in neuro-oncology, the potential to predict the presence or location of a tumor based on behavior had greater importance. In addition, it is well recognized that behavioral syndromes associated with a disease in a particular region of the brain may be caused by lesions in others because of diaschisis or disconnection effects (Price et al., 1997).

While cancer in the CNS is always associated with the possibility of a very complex or idiosyncratic behavioral presentation, the clinician caring for neuro-oncology patients will often encounter and should be prepared to address several common neuropsychiatric syndromes.

### Delirium (Encephalopathy)

Delirium is a disorder of generalized CNS dysfunction characterized by an altered level of consciousness and abnormal attention, perception, memory, motor behavior, and sleep–wake cycle. A common problem in all seriously ill patients, it affects as many as 85% of those with advanced cancer (Massie et al., 1983). Those with delirium may demonstrate a variable level of arousal, ranging from stupor to hyperalertness and hypervigilance. Motor activity similarly ranges from profound psychomotor retardation to severe hyperactivity. Delirious patients are unable to pay attention; consequently short-term memory is usually impaired, as are other cognitive functions. Delirious patients are often disoriented. Sensory misperceptions (illusions) are common, as are frank hallucinations; these are most often visual, but can be auditory, tactile, or somatic. The patient may experience paranoid delusions. Disrupted sleep–wake cycles may precede onset of delirium or may be a function of it.

The disorder is of acute onset, usually hours to days. If the underlying cause or causes can be addressed, delirium will resolve quickly. It may also evolve into a more stable, but persistent, state of impaired consciousness and cognition and may be a preterminal event. Patients who recover from a delirium or persistent encephalopathic state often have no memory of the time during which they were impaired. Family members frequently find the acute behavioral and personality changes associated with delirium to be extremely frightening and more difficult to deal with than even the implications and neurologic sequelae of advancing or terminal disease.

Causes of acute altered mental status in neuro-oncology may be direct, indirect, or iatrogenic. In the case of primary and metastatic tumors and leptomeningeal disease, increased intracranial pressure may present with an acute or gradual decrease in level of arousal. The same is true of generalized and complex partial seizures due to tumor or post-treatment seizure focus. In most cases, CNS malignancy directly causes mental status changes along with focal neurologic signs or symptoms. The presentation may, however, be strictly behavioral.

Metabolic abnormalities are the most common cause of delirium in cancer and include severe electrolyte disturbances, hypercalcemia, and hypoxia. Other common causes include systemic or CNS infection and nutritional derangements (Breitbart and Cohen, 1998). Patients with advancing CNS malignancy and associated impairment, like those with other serious brain disorders (e.g., dementia, cerebrovascular accidents) are also vulnerable to systemic insults.

As a whole, pharmacologic agents used in supportive care are more likely to cause acute altered sensorium than are antineoplastics. Patients with compromised CNS function are sensitive to the effects of opioid analgesics, benzodiazepines, corticosteroids, and sympathomimetics, including bronchodilators and vasopressors (Slaby and Erle, 1993; Stiefel et al., 1989). The list of antineoplastics *commonly* associated with acute altered mental status is relatively small and includes methotrexate, ifosphamide, and cytosine arabinoside (Fleishman and Kalash, 1998). These agents will most often cause a delirium or dementia with behavioral disinhibition, as will biologic response modifiers (e.g., interleukin-2) used alone or in combination therapy (Denicoff et al., 1987; Meyers and Valentine, 1995). Assessment of delirium in the neuro-oncology patient should always include a review of all drugs the patient is taking. Radiation therapy to the brain infrequently causes an acute toxicity syndrome characterized by delirium or rapid cognitive decline (Posner, 1995). This can occur during or shortly after treatment, and is thought to be due to edema and increased intracranial pressure. It is controlled (and usually prevented) by administration of corticosteroids before/during radiation therapy.

### Dementia

The hallmark of dementia is progressive cognitive impairment in the face of a clear sensorium. Associated mood, personality, and behavioral disturbances often accompany dementia. In the day-to-day care of patients with cancer in the nervous system, these associated problems may require the most attention. Prominent symptoms of dementia include short-term and long-term memory impairment, altered judgment and abstract reasoning, and disturbance of higher cortical function. The onset and progression of dementia is usually gradual and can be quite subtle. In the setting of progressive CNS disease, cognitive decline can be rapid. Patients may be competent in some areas of cognitive function and severely impaired in others. Patients with dementia, regardless of etiology, are at high risk for other psychiatric disorders such as delirium and depression (Liptzin, 1996; Alexopoulos, 1996) and are vulnerable to metabolic derangements and side effects from medications that others might easily tolerate.

Malignant disease in the nervous system causes dementia in several ways. Direct invasion of the brain by primary or metastatic tumor is the most obvious cause. Disconnection syndromes may occur as a result of tumor, surgical resection, or progressive radiation injury. In such cases disrupted neurotransmitter pathways may lead to cognitive impairment caused by lesions in areas not primarily associated with cognitive function. Chronic increased intracranial pressure may have diffuse effects on level of arousal with subsequent impairment of cognitive ability.

Organic mental syndromes caused by whole-brain radiation therapy are well described. An *acute radiation syndrome* is associated with acute change in mental status, headache, and nausea. Associated cognitive impairment resolves quickly if the underlying

problem is treated. *Late delayed radiation toxicity* usually causes a dementing syndrome, which is progressive, permanent, and may be fatal (Posner, 1995; DeAngelis et al., 1989). While dementia is intuitively associated with progression of CNS malignancy, few patients or families are actually prepared for the consequences of impairment. It is also difficult to accept the fact that some aspects of treatment (i.e., progressive necrosis after radiation therapy) may produce deleterious side effects even in the face of stable disease. As is the case with primary dementias (i.e., Alzheimer's disease), caretakers are often under great strain and are themselves at high risk for physical and psychological morbidity.

It is often problematic to differentiate between dementia and cognitive dysfunction associated with depression (pseudodementia). Early in the course of the disease, cognitive deficits may be suspected, but are difficult to actually detect at clinical examination. Formal neuropsychological testing (see Chapter 26) can be extremely useful in such situations. Testing also provides objective measures of cognitive status over time, which is important in treatment planning. Identifying cognitive strengths and weaknesses assists with counseling about vocational choices and in deciding whether or not to refer a patient for cognitive rehabilitation.

### Personality and Behavioral Changes

Patients with CNS cancer may demonstrate changes in personality and behavior as an initial sign of the presence of disease and as disease and treatment progress. Such changes can pose a significant management problem for caretakers, and, in the worst cases, can place the patient and others in physical danger. Tumor involvement or other involvement of the frontal lobes, temporal lobes, corpus callosum, and diencephalon may lead to irritability, paroxysmal anger and rage, affective lability, facetiousness, impulsivity, and, especially with diencephalic tumors, inappropriate eating, sleeping, and sexual behaviors (Lishman, 1999a). Accompanying progressive CNS dysfunction, one may encounter "coarsening" of personality, where more objectionable personality and behavior traits become increasingly prominent, similar to the behavior exhibited in primary dementing illnesses. Patients may or may not be aware of these behaviors and in any case may not be able to control them.

Disinhibition and aggression may be functions of structural damage or represent physiologic alterations of critical neurotransmitter pathways. When behaviors are caused by these events, they are likely to become chronic management issues. Adverse drug reactions should also be considered. As noted above, corticosteroids can produce manic or psychotic behaviors. Neuroleptic antiemetics can cause akathisia, which can lead to aggressive behavior as an inexpressive patient is frustrated by attempts to convey discomfort. Psychostimulants used to treat cognitive decline can cause anxiety and agitation. Behavioral disinhibition is a common adverse effect associated with benzodiazepine anxiolytics in patients with cognitive impairment. Unrelieved pain is also a possible cause of agitation in cognitively impaired or aphasic patients.

## MANAGEMENT OF DELIRIUM, DEMENTIA, AND BEHAVIORAL SYMPTOMS

Managing cognitive and behavioral syndromes in patients with CNS cancer should ideally begin with identification and treatment of the etiology of the patient's medical problems, if possible. This approach is most likely to be successful in managing delirium, but more problematic for managing dementing illnesses and paroxysmal aggression due to fixed CNS lesions. During the search for a reversible cause, or in the face of a chronic structural or physiologic insult that cannot be reversed, medications and behavioral approaches are indicated for treatment.

### Pharmacotherapy

#### *Antipsychotic Medications*

Antipsychotic drugs are useful not only against hallucinations and perceptual disturbances but also for anxiolysis and management of disinhibition caused by CNS disease. Some antipsychotics are also effective antiemetics. Several new antipsychotic drugs have recently become available (Table 27–1). Because patients with CNS malignancy may be ultrasusceptible to both the positive and negative effects of antipsychotics, the well-known recommendation to "start low and go slow" applies.

Haloperidol is a high-potency antipsychotic drug that is effective in reducing confusion and agitation without causing undue sedation. It can be given orally,

**Table 27–1.** Selected Neuroleptic Medications for Patients with Neuro-oncologic Illness

| *Drug Name* | *Starting Daily Dosage (PO or IV)* |
|---|---|
| Haloperidol* | 0.5 mg (mild symptoms) |
| | 2–4 mg (severe symptoms) |
| Risperidone | 1 mg bid |
| Olanzapine | 2.5–5 mg |
| Chlorpromazine* | 10–50 mg qd to tid |
| Thioridazine | 10–25 mg qd to tid |

*Parenteral forms available.

in tablet or liquid concentrate form, or by parental injection. Although not formally approved for intravenous (IV) administration, haloperidol is commonly, rapidly, and safely delivered by this route to patients experiencing agitation or who are unable to take oral medications. It is thought that haloperidol's potency is effectively doubled by IV administration. Like other high-potency antipsychotics, haloperidol is associated with the risk of akathisia and parkinsonian side effects (as well as relatively less severe anticholinergic effects and $\alpha$-adrenergic blockade than are low-potency neuroleptics), although this risk appears to be reduced with IV administration. If necessary, these side effects can also be treated with benzotropine, benzodiazepines, and other medications. Dosing requirements vary greatly and are governed in part by the severity of the symptoms in question and stage of illness. Severely ill, end-stage, or elderly patients may require very modest doses (0.5 to 1.0 mg per OS [PO] or IV once or twice per day or every few hours as needed until symptom control is achieved). In the case of persistent or severe agitation (e.g., hyperactive delirium), significantly higher doses may be given to sedate the patient.

Chlorpromazine is a lower potency antipsychotic drug that is more sedating than haloperidol and may be administered by the same routes (including continuous IV infusion in extreme cases). Typical doses are in the range of 25 to 50 mg PO or IVPB every 6 to 12 hours. Because of anticholinergic and $\alpha$-adrenergic blockade effects, there is a significant risk of hypotension when chlorpromazine is given at high doses or administered intravenously.

Thioridazine is a low-potency antipsychotic. At low doses (25 to 100 mg) it is also an effective primary anxiolytic, particularly for patients who are vulnerable to the side effects of benzodiazepines.

Risperidone and olanzapine are newer agents, which are administered orally and with exceptions appear to be well tolerated (i.e., are less likely to cause akathisia). In the setting of CNS cancer, they can be used to treat low-intensity delirium or chronic behavioral symptoms. They may be only relatively useful in emergency situations when parental dosing is not possible.

### *Anticonvulsants*

Anticonvulsant medications have been used to treat agitation and other behavioral disorders associated with senile dementia (Roane et al., 2000; Grossman, 1998), developmental disorders, and traumatic brain injury. The medications also have recognized utility in managing some primary psychiatric disorders. Whereas there are, to date, no reported trials employing these medications in neuro-oncology, they are used when other medications have not been effective or as adjuncts to behavioral therapy. Anticonvulsants employed in this setting include carbamazepine, valproic acid, and gabapentin.

### *Psychostimulants*

Psychostimulant medications that have a role in the treatment of depression in the medically ill have additional efficacy as palliative agents against psychomotor slowing and dementia associated with CNS cancer (Weitzner et al., 1995; DeLong et al., 1992). In one open-label trial using methylphenidate, cognitive and functional performance improved over time, even in the face of progressive disease or radiation necrosis (Meyers et al., 1998). These drugs, including d-amphetamine, methylphenidate, and pemoline, appear to work as direct or indirect dopamine agonists.

Common side effects include anxiety, insomnia, gastrointestinal distress, and autonomic disturbance (hypertension). These drugs inhibit metabolism of tricyclic antidepressants, coumadin anticoagulants, and some anticonvulsants, including phenobarbital and phenytoin (Meyers et al., 1998). Despite these potential problems, patients with primary brain tumor appear to tolerate psychostimulants very well. When used to treat cognitive decline or psychomotor slowing, typical starting doses are 5 mg of

methylphenidate or d-amphetamine two times per day, but the doses can be titrated up. In severely impaired patients, doses of methylphenidate approaching 100 mg/day have been safely and effectively employed.

## MOOD AND ANXIETY DISORDERS

Depression and adjustment disorders are the most common psychiatric disorders in the general oncology population; it is not surprising that they are typically encountered when malignant disease involves the CNS. The cause may be due to pre-existing or recurrent mood disorders (primary mood disorders), direct effects of disease or side effects of treatment (secondary mood disorders), or psychological reactions to severe stress (adjustment disorders).

### Depression

Mood disorders exist on a continuum from severe depression (major depression) to frank mania. Patients with depressive disorders experience psychological and physical symptoms. The former may include dysphoria (sadness), anhedonia, feelings of guilt, and suicidal thoughts. Somatic symptoms include fatigue, impaired concentration, altered sleep and appetite, and decreased libido. Anxiety is increasingly recognized as a symptom of mood disorders as well.

Diagnosis of depression in the medically ill is complicated by problems inherent in distinguishing vegetative symptoms caused by mood disorder from those caused by disease and treatment. In the setting of other brain disorders (e.g., cerebrovascular accident) there is even disagreement over the clinical utility of vegetative symptoms (Robinson, 2000; Erban et al., 2000). In psycho-oncology, some clinicians and researchers recommend that emphasis be placed on psychological symptoms when establishing a diagnosis (Massie and Popkin, 1998). Additional psychological symptoms have been proposed and successfully employed as substitute criteria in place of vegetative symptoms on a standard depression rating scale (Endicott, 1984).

All patients with depressive symptoms should be evaluated for possible suicidal intent. Assessing suicidal ideation requires careful determination of whether it reflects depressive illness or is a function of a wish to exert control over intolerable circumstances. Breitbart and Krivo (1998) have outlined factors that place a cancer patient at high risk for suicide: poor prognosis and advanced disease; current or past depression; uncontrolled pain, delirium, past history of suicide attempts; family history of suicide and alcohol abuse; and feelings of isolation or helplessness.

Pathology in particular areas of the brain is most likely to be associated with depressive syndromes. This includes damage (e.g., tumor, radiation necrosis) to the dorsolateral frontal lobes or their anatomic/physiologic circuits, producing executive dysfunction consistent with subcortical dementia (Chow and Cummings, 1999; Starkstein and Robinson, 1999), as well as dominant temporal lobe lesions (Lishman, 1998a). Patients with pituitary or hypophyseal lesions and associated neuroendocrine dyscrasias are subject to mood and vegetative symptoms that appear in primary depression.

Few drugs used to treat CNS malignancy are associated with depressive disorders. Of these, corticosteroids are the most problematic (Stiefel et al., 1989) and are associated with symptoms ranging the spectrum of mood disorders. Patients may become anxious with psychomotor agitation and racing thoughts consistent with mania. They may also become dysphoric with negative or nihilistic ruminative thoughts, sometimes escalating to the point of psychosis. Because reactions are idiosyncratic, it is difficult to predict which patients will have adverse reactions to steroids. It is sometimes possible to minimize depressive reactions by changing agents or by decreasing dose. The interferons are associated with depressive reactions, usually at high doses or over long treatment periods. On rare occasions, acute depressive reactions occur shortly after treatment begins. Interferon-$\alpha$ is most likely to cause neuropsychiatric side effects. Interferon-$\beta$, which is used more often in neuro-oncology, is generally less problematic (Valentine et al., 1998).

Central nervous system depressants may cause depressive syndromes in sensitive individuals. These drugs include opioid analgesics, benzodiazepine anxiolytics, hypnotics, and some anticonvulsants (e.g., phenobarbital, phenytoin). These presentations usually resolve or decrease in intensity with dose reduction or discontinuation of medication.

### Anxiety

Persistent and incapacitating anxiety symptoms in cancer patients may be an exacerbation of pre-existing primary psychiatric disorders (e.g., generalized anxiety disorder, panic disorder) or may be a function of the disease process. Patients typically experience fear, worry, and irritability. They have intrusive, ruminative, unpleasant thoughts and are often hyperalert or hypervigilant. If anxiety becomes severe, physical symptoms may be encountered, including palpitations, diaphoresis, dyspnea, and numerous gastrointestinal complaints. Sleep becomes difficult. If anxiety proceeds to panic, the patient may experience feelings of impending death and severe pain. In fact, panic attacks are in the differential diagnosis of myocardial infarction.

Primary anxiety and panic disorders are relatively common in the general population. They tend to be persistent or recurrent over time, which aids in establishing the diagnosis and emphasizes the need for taking an adequate history. Predisposed patients are at some risk for exacerbation of these disorders when subjected to the physical processes of cancer diagnosis and treatment, including use of magnetic resonance imaging scanners, immobilization for radiation therapy or surgery, or placement of indwelling catheters.

Several secondary causes of anxiety and panic are encountered in neuro-oncology patients. Anxiety is a recognized prodromal and post-event symptom associated with seizures. Other physical causes of anxiety symptoms are similar to those considered in the etiology of delirium: hypoxia of any cause (including anemia or evolving pulmonary embolus), electrolyte and endocrine abnormalities, sepsis, and unrelieved pain.

Many drugs (i.e., corticosteroids) used in primary or supportive treatment of cancer in the nervous system often cause anxiety symptoms. Various phenothiazine antiemetics and other neuroleptics (e.g., haloperidol) can cause akathisia that is described by patients as "anxiety." Drugs of any class with significant anticholinergic effects can cause anxiety and agitation, as can benzodiazepine anxiolytics and opioid analgesics.

### Adjustment Disorder with Depressed or Anxious Features

Not all etiologies of depression or anxiety in this setting are "organic." Patients with clear sensorium react emotionally to the diagnosis of CNS cancer in a manner similar to patients diagnosed with other malignancies. Psychological reactions to this severe stress most often include depression and/or anxiety. These reactions may be mild or severe, with major disruption of daily life. Whether neuro-oncology patients are at higher risk than other cancer patients for such symptoms is not known. Recent studies of primary brain tumor patients treated with surgery have found lower rates of anxiety and depression than those reported in the general oncology population (Anderson et al., 1999).

The initial reactions to a cancer diagnosis may include shock and disbelief followed by dysphoria, despair, anger, and anxiety. The ability to concentrate and carry out activities of daily living is impaired; there are intrusive thoughts about the diagnosis and worry about a future that cannot be controlled (Massie and Holland, 1992). Vegetative or somatic symptoms (i.e., insomnia, anorexia, fatigue) may be experienced; the syndrome can be identical to that involving secondary or primary mental disorders.

Emotional turmoil at times of great stress in cancer patients is normal, and patients benefit from reassurance and support provided by the neuro-oncology staff. Psychiatric intervention is generally not required unless the symptoms interfere with function or when they are highly distressing or prolonged. Patients with symptoms in excess of those "expected" receive a diagnosis of adjustment disorder with depressed or anxious features, or both.

Psychiatric interventions are aimed at helping the individual resume successful coping. Several modalities are used. Individual psychotherapy focuses on clarifying the medical situation and the meaning of the illness to the patient and on reinforcing the patient's positive coping strategies. It is often desirable to include a spouse or family member in the sessions to enhance support at home. Couples and family therapy are particularly useful when interpersonal issues are prominent. Group therapy, with a focus on illness, can also be helpful, as can behavioral interventions such as hypnosis or relaxation training (Passik and Massie, 1996).

The decision to prescribe psychotropic medications to treat adjustment disorders requires the presence of a persistent level of distress that interferes with treatment or ability to carry out activities of daily living. Benzodiazepine anxiolytics can be very helpful for managing acute anxiety, although caution is re-

quired in the setting of significant cognitive impairment or with the use of other CNS depressant medications. Dependence and abuse are usually not an issue for psychologically healthy individuals.

### Pharmacotherapy of Depression

Antidepressants are effective for treating primary and secondary mood disorders. Antidepressants with several different mechanisms of action are available and are thought to be equally efficacious in treating depression. There is no "gold standard" antidepressant for use in general psychiatry or oncology. The choice of antidepressant depends on several factors, including the side effect profile of the drug in question, the patient's particular symptoms and medical status, and cost. Antidepressants usually take 2 to 4 weeks to achieve antidepressant effect. Beneficial effects on insomnia can occur sooner. Ambulatory patients with normal metabolic function can be started on antidepressants at doses consistent with those used in the general population. In the face of hepatic or renal impairment, and for the elderly, it is best to start at half or even quarter doses and titrate up, if tolerated. Antidepressant therapy often is continued for at least 6 months after antidepressant response is achieved. Selected antidepressants for use in neuro-oncology are listed in Table 27–2.

#### *Selective Serotonin Reuptake Inhibitors*

Selective serotonin reuptake inhibitors (SSRIs) are the first line of therapy for treating depression because of their excellent safety and side effect profile, if not superior efficacy. Several of the SSRIs now have indications for treatment of panic and phobic disorders. These include fluoxetine, sertraline, paroxetine, and citalopram. Their relative lack of anticholinergic

**Table 27–2.** Selected Antidepressant Medications Used by Patients with Neuro-oncologic Illnesses

| *Drug Name* | *Starting Daily Dosage (mg PO)* | *Therapeutic Daily Dosage (mg PO)* |
|---|---|---|
| Selective serotonin inhibitors | | |
| Fluoxetine* | 10–20 | 20–60 |
| Sertraline* | 25–50 | 50–200 |
| Paroxetine* | 10–20 | 10–60 |
| Citalopram | 10–20 | 20–60 |
| Atypical antidepressants | | |
| Bupropion | 100 bid | 200–450 |
| Trazodone | 50–100 | 150–400 |
| Venlafaxine | 37.5–75 | 75–350 |
| Nefazodone | 100 bid | 300–600 |
| Mirtazapine | 15 qh | 15–45 |
| Tricyclic antidepressants | | |
| Amitriptyline | 25–50 | 75–150 |
| Imipramine | 25–50 | 75–200 |
| Desipramine | 25–50 | 75–200 |
| Nortriptyline | 25–50 | 50–150 |
| Psychostimulants | | |
| Methylphenidate | 2.5 at 8 AM and noon | 5–30 |
| D-amphetamine | 2.5 at 8 AM and noon | 5–30 |
| Pemoline | 18.75 in AM and noon | 37.5–150 |

*SSRIs maybe used at high end of dose range for anxiety/panic.

and $\alpha$-adrenergic blocking properties makes them good choices for patients with a serious medical illness. Unlike tricyclic antidepressants, SSRIs have not proven lethal in overdose, making them a good choice for use by severely ill or unstable, depressed patients.

Common side effects of SSRIs include anxiety and nausea; these effects are usually short lasting. Weight loss and sexual dysfunction are potentially problematic with fluoxetine, although its "activating" effects are a potential advantage. Some individuals become sedated on paroxetine and citalopram, a problem that can be minimized with nighttime dosing. Sexual side effects (anorgasmia) can also occur with these drugs. Usual starting doses of fluoxetine are 10 to 20 mg every morning; sertraline, 20 to 25 mg every morning; paroxetine, 10 to 20 mg every morning or at bedtime; and citalopram 10 to 20 mg at bedtime.

### *Tricyclic Antidepressants*

Use of the tricyclic antidepressants (TCAs) is now secondary to use of SSRIs and newer "third-generation" agents. However, their advantages include cost and the ability (in the healthy adult population) to obtain accurate therapeutic blood levels. Tricyclic antidepresssants are also useful for treatment of neuropathic pain and, in some cases, are effective antiemetics. Antihistaminic, anticholinergic, and $\alpha$-adrenergic blockade effects (sedation, dry mouth, constipation, orthostatic hypotension) are more serious with tertiary amines (e.g., amitriptyline, imipramine) than secondary amines (e.g., nortriptyline, desipramine). These side effects may be problematic in patients with CNS impairment or in the elderly. They are, however, successfully employed to treat depressive syndromes associated with Parkinson's disease and cerebrovascular accidents.

Tricyclic antidepressants are potentially lethal in overdose, especially in combination with alcohol or CNS depressants, and must be used cautiously by patients with cardiac conduction abnormalities. Weight gain is an unacceptable side effect for some patients. Sedation, which is a disabling side effect for others, may actually be advantageous to patients with insomnia. In the setting of CNS cancer, initial dosing of TCAs should be conservative (25 to 50 mg at bedtime) with dose escalation in 25 to 50 mg increments every few days until effective. Determination of therapeutic blood levels requires that the drugs be at steady-state metabolism, achieved after 5 to 7 days at a given dose.

### *"Third-Generation" Antidepressants*

The newer antidepressants were developed in response to advances in understanding the neurochemistry mood disorders. These agents, which affect norepinephrine and/or serotonin metabolism, include venlafaxine, mirtazapine, and nefazodone. Their efficacy in the oncology setting has not yet been determined by clinical studies. As with other antidepressants, side effect profiles may dictate which drug is chosen. This generation of antidepressants causes less difficulty with sexual dysfunction, sedation, and weight change associated with SSRIs and TCAs.

### *Psychostimulants*

Stimulants (e.g., methylphenidate, d-amphetamine, pemoline) have an established role in treating depression in the medically ill (Masand and Tesar, 1996; Rosenberg, 1992) and are also used to counteract opioid-induced sedation (Bruera et al., 1992). These drugs appear to have a more rapid onset of antidepressant action than other agents. Improvements in mood, level of physical activity, and appetite are sometimes seen within 2 to 3 days after initiating treatment. In the setting of medical depression, as with cognitive decline, it is possible to maintain psychostimulant therapy for 1 year or longer. Psychostimulants have occasionally been employed in conjunction with standard antidepressants to achieve an immediate improvement in energy and mood until the SSRI or TCA becomes effective. The stimulant is then tapered and discontinued. Initial dosing should be conservative—2.5 mg every morning and noon for d-amphetamine and methylphenidate. A sustained-release form of methylphenidate is now available. Doses can be titrated upward if tolerated, but it is usually not necessary to increase the dosage beyond 20 to 30 mg/day. Side effects of psychostimulants include anxiety, insomnia, gastrointestinal upset, and hypertension or hypotension. At high doses patients may develop involuntary motor movements, paradoxical sedation, and delirium. If such effects do occur, the stimulant can be discontinued and the symptoms will likely resolve.

### *Atypical and Other Antidepressants*

Other antidepressants have utility and are prescribed if a patient has been successfully treated with a given

antidepressant in the past. Bupropion has "activating" effects, which make it attractive in the setting of depression with psychomotor slowing. There is also less risk of sexual dysfunction with use of this antidepressant, and the slow-release formulation is currently utilized as adjunctive therapy for smoking cessation. Use of bupropion is associated with a modest increased risk of seizures that may make its use problematic in patients with CNS disease.

Monoamine oxidase inhibitors (MAOIs) are effective antidepressants whose use is made more difficult because of the need for patient compliance with dietary restrictions to avoid tyramine-associated hypertensive crises. Those requirements along with the potential for interaction with other drugs used in oncology (i.e., procarbazine, meperidine) make MAOIs less useful for treating depression in this setting.

### *Lithium*

Patients who have been receiving lithium before development of cancer should be maintained on it through treatment, if possible. Close monitoring may be required in preoperative or postoperative periods when fluid intake may be restricted. Dose reduction may be necessary for seriously ill patients.

## Pharmacotherapy of Anxiety

Several different classes of psychotropic drugs are useful for managing anxiety. In the face of CNS cancer, the clinician must carefully consider drug side effects and the possibility that anxiety is a function of an underlying neurologic, metabolic, or iatrogenic disturbance that requires attention. Advances in the pharmacotherapy of general anxiety and panic disorders may change prescribing practices in oncology.

### *Benzodiazepines*

Benzodiazepines (BZPs) are currently the drugs of choice for managing acute and chronic anxiety states in oncology patients (Table 27–3). Used appropriately, these medications are safe and effective. In addition to anxiolysis, BZPs have variable hypnotic, antiemetic, anticonvulsant, and muscle-relaxant effects that are of benefit. Unease about dependence or abuse is usually not a significant concern in the oncology setting. These medications may add to sedation caused by other drugs, and patients with CNS compromise must be treated carefully because of risk of behavioral disinhibition or precipitation of delirium. Tolerance develops more quickly with short-acting BZPs than with longer acting agents. If used regularly, they should be tapered to avoid withdrawal syndromes.

Short-acting BZPs such as lorazepam, alprazolam, and oxazepam have a relatively rapid onset and short duration of action, making them useful for treating acute-onset anxiety or panic. Their metabolic profiles make them better tolerated by patients with impaired hepatic or renal function. Lorazepam and oxazepam

**Table 27–3.** Selected Benzodiazepines Commonly Prescribed for Patients with Neuro-oncologic Illnesses

| *Drug* | *Approximate Dose Equivalent* | *Initial PO Dosage (mg)* | *Half-Life (Hours)* | *Active Metabolite* |
|---|---|---|---|---|
| Short half-life | | | | |
| Alprazolam | 0.5 | 0.25–0.5 tid | 10–15 | No |
| Lorazepam* | 1.0 | 0.5–2.0 tid | 10–20 | No |
| Oxazepam | 10.0 | 10–15 tid | 5–15 | No |
| Temazepam† | 5.0 | 15–30 qh | 10–15 | No |
| Intermediate/long half-life | | | | |
| Clonazepam | 0.5 | 0.5 bid | 18–50 | No |
| Diazepam | 5.0 | 5–10 bid | 20–70 | Yes |

*Lorazepam can also be administered intramuscularly; other benzodiazepines are erratically absorbed when given intramuscularly.

†Hypnotic agent.

are conjugated and eliminated, whereas alprazolam's metabolite is inactive. These medications are typically given two to four times per day as needed for anxiety. They can be given on a regular schedule if necessary. In cases of extremely severe anxiety or panic, lorazepam may be administered by intramuscular or IV injection.

Longer acting BZPs such as diazepam and clonazepam are useful for persistent anxiety states, and clonazepam is appropriate for managing some aggressive behavioral syndromes as well. The longer duration of action of these drugs is potentially problematic for the elderly or severely ill.

### *Alternative Anxiolytics*

Used at low doses, neuroleptics (haloperidol, risperidone, olanzapine, and especially thioridazine) may be safer and more effective than BZPs for managing acute and chronic anxiety in patients with CNS compromise or those with a history of adverse reactions to standard antianxiety drugs. Buspirone is effective for treatment of anxiety in some patients naïve to benzodiazepines.

Selective serotonin reuptake inhibitor antidepressants (paroxetine, sertraline, fluoxetine) are a first line of therapy for chronic anxiety and panic disorders. Their favorable side-effect profiles, especially their effect on sensorium and cognitive function, make them attractive candidates for use in oncology and neuro-oncology. Typically SSRIs are given at moderate to high doses (paroxetine 40 to 60 mg/day, sertraline 100 to 150 mg/day) to effectively treat anxiety and panic. Benzodiazepines can be given for acute anxiety control while waiting for the SSRI to take effect.

## PSYCHOTHERAPEUTIC INTERVENTIONS

Psychotherapy can help patients with neuro-oncologic illnesses cope with the many realities of their disease and its treatment. Neuro-oncology patients struggle to make difficult adjustments common to all cancer patients, but have the added burden of damage to the brain. The loss of cognitive abilities, motor control and strength, language abilities, and control of bodily functions can disrupt relationships and life plans, ultimately resulting in inevitable disability and dependency. In addition, the effects of disease, surgery, and medication side effects (e.g., from corticosteroids) can cause drastic changes in appearance, which can seriously compromise body image and the patient's and/or partner's interest in sex.

Many patients with systemic cancers adjust well before the development of brain metastases. These patients may have adjusted to increased dependency and disruption of life plans and may have learned to cope with changes in appearance and existential issues. Upon development of neurologic symptoms (and, possibly, behavioral symptoms), previously effective coping strategies may become ineffective. The fear of loss of control and of "losing one's mind" is significant for patients who find that they can no longer achieve the same sense of mastery over their illness that they once enjoyed. Awareness of cognitive deficits for patients with primary or metastatic neurologic disease can be frightening and frustrating.

For example, a patient who has expressive or receptive aphasia caused by disease affecting Broca's or Wernicke's area of the brain often struggles to speak and communicate. The resulting isolation can be profound, as the illness decreases the patient's ability to interact with family members. The direct effects of the tumor on the brain combined with vulnerability to organic mental syndrome cause the patient to have to adjust to loss of control of behavior. In cases of transient behavioral changes, such as those caused by delirium, the resolution of an episode is often accompanied by bewilderment and embarrassment. It is common for neuro-oncology patients to feel they have become burdens to their families, a realization that can be so intolerable that it is sometimes accompanied by suicidal thoughts. For families, the stigma associated with mental illness as well as fear about the implications of neurologic or psychiatric impairment may make the development of CNS disease far more difficult to tolerate than other systemic involvement.

Psychotherapy for neuro-oncology patients is supportive in nature, drawing upon crisis intervention and psychoeducational techniques (Massie et al., 1989; Sourkes et al., 1998). The therapist utilizes the principles of crisis intervention therapy when helping a patient confront the overwhelming nature of a neuro-oncologic illness. These principles involve *(1)* an adoption of an active and involved stance on the part of the therapist, *(2)* an emphasis on providing information and techniques for coping with specific and solvable problems, *(3)* the goal of restor-

ing the patient to baseline function (as opposed to a goal for personal change or growth), and *(4)* the importance of stressing symptom control as an aid to adaptation. As in all crisis intervention work, the therapist must be available to assist the patient and must assume an active consultative role.

Coping is generally facilitated by the acquisition of accurate and useful information. Teaching patients and their caregivers about the effects of the illness and its treatments is reassuring, especially when the patient or caregivers misinterpret the meaning or consequences of emerging symptoms. The therapist normalizes and validates the patient's reactions to his or her illness and helps the patient prepare for the "typical" disease course. Information is provided at a rate that is comfortable for the patient, utilizing jargon-free language and a manner that invites questions and exploration. Information and support can help the patient define problems at various points in the disease course that can be solved and then, in turn, engender a sense of accomplishment.

Neuro-oncology patients, if not too impaired in attention and concentration, can benefit from relaxation therapy and other cognitive behavioral techniques with a family member acting as a co-therapist. The co-therapist helps augment the patient's memory and assists with the practice and application of techniques learned with the therapist outside of sessions. Keeping a diary is another technique for augmenting failing memory and cognitive abilities. It can be useful for patients with memory problems to write down one or two key points during each session. Ideally, the diary should be kept in a book that is small enough for patients to keep with them at all times. The diary can help the patient recall important aspects of the therapy and can evoke a sense of support and decreased isolation. The scheduling of sessions is altered to accommodate neuro-oncology patients. Sessions should be short, generally no longer than 20 to 30 minutes, so as not to overwhelm or fatigue the patient, and are scheduled frequently to provide a sense of continuity and connection.

Anticipatory bereavement and preparation for death is one focus of psychotherapy with neuro-oncology patients. Patients who are slowly watching their independent function decrease as they lose cognitive function and other abilities have much to mourn. For some patients, there is often a sense of urgency to accomplish certain goals, not before death but before abilities are lost. We have found it helpful to encourage patients to give advance directives regarding treatment alternatives and resuscitation early in the course of illness. Making these wishes known can decrease the burden the patient feels he or she is imposing on the family and give a sense of control over an illness course that can be overwhelming. Some individuals "postpone" talk of advance directives because such talk is inconsistent with their need to maintain hope. Others are not troubled by simultaneously entertaining seemingly contradictory aspects of their situation.

Family members sometimes support the patient's need to hold off thoughts of death and dying. The process of death and its aftermath can be made more difficult for those individuals, who may need their own forum to confront these issues. Nonverbal techniques, such as music and art therapy, can help the patient learn to communicate and express himself or herself when the illness has made verbal expression difficult or impossible. We know of several patients with brain tumors who realized their artistic abilities only after their diagnosis of cancer. One patient, a talented sculptor, filled his home with extraordinary works of art during the course of his illness. The patient felt that the art would leave behind a tangible reminder of him that would help his wife cope with his death. Another patient, a talented artist who could no longer paint because of his tumor, sought self-expression by arranging and re-arranging the books on his bookshelves (Passik and Massie, 1996).

At times, speech disorders induced by neuro-oncologic illnesses may affect second and third languages the patient had learned but that were not his or her primary language or "mother tongue." Thus, the degree of ability of the patient to speak his or her first language should be investigated, as this factor can be used in the service of the therapy and to increase quality of life. Physical and cognitive rehabilitation techniques developed during work with brain-injured and stroke patients can also be applied to and benefit neuro-oncology patients. Referral of patients to rehabilitation centers continues to be an obstacle, as some centers seem slow to accept brain tumor patients.

Cognitive rehabilitation strategies can teach patients how to improve their concentration and aid their memory. Small gains in these areas can pay big dividends in psychotherapy. Decreased perception of dependency can increase self-esteem and quality of life.

## PSYCHOSOCIAL IMPACT ON SPOUSES AND FAMILIES

### Interactions with Family Members

The families of patients with neuro-oncologic illnesses face the typical stressors that affect families of patients with non-neurologic cancer. These stressors have prompted mental health professionals who work with cancer patients to recognize family members as "second-order patients" (Lederberg, 1998). Family members face a different and ongoing process of adjustment throughout all stages of the patient's illness; they confront the onerous tasks of providing emotional support as well as basic care-taking, sharing responsibility for making medical decisions, weathering financial and social costs, and maintaining stability in the midst of change. The unique nature of the symptomatology of neuro-oncologic illness, both primary and treatment related, amplifies the difficulty of making these adjustments. By rendering the patient less capable of interacting with staff and family and by compromising his or her cognitive capacities, this illness produces a shift in the responsibility to the grieving family members.

Feelings of loss, of being overwhelmed, and anger at the patient for behavior that cannot be controlled are often followed by feelings of guilt. Family members may experience conflict after assuming care-taking and medical decision-making burdens that they may feel ill prepared to handle. The medical team must give the family attention to help prepare them for often intense and conflicted emotional responses to the patient's disease and treatment course. Ambivalent feelings about providing high levels of care while watching loved ones suffer with loss of dignity and poor quality of life are difficult to endure. It is not unusual for family members to wish that the disease would quickly run its course and take the life of the patient. Such feelings, while common, are not easily entertained. These feelings are often accompanied by loneliness and exhaustion. Often motivated by the desire to hide the patient from children or friends in an attempt to protect the patient's waning sense of dignity, spouses will take on complete 24 hour care to avoid exposing others to the stark realities of the illness.

Family members of neuro-oncology patients face a set of unique stressors, including an almost universally poor prognosis and complicated disease course. This complex, downward course is marked by the accumulation of multiple irreversible neurologic deficits, which cause patients to lose the ability to function independently, creating a burdensome caregiving responsibility. The families of neuro-oncology patients find themselves in a state of mourning (anticipatory bereavement) long before the actual death of the patient. The multiple losses they face include *(1)* the loss of the patient's cognitive function and emotional state; *(2)* the loss of the characteristic marital, sexual, and family relationships; and *(3)* the loss of the spouse's self-image due to changes in his or her relationship with the patient. If the patient can no longer engage in sexual activity, for example, the well spouses (if they are to remain faithful, as most do) must adapt to view themselves as not sexually active. The following case illustrates appropriate referral for family therapy of a patient at odds with her support system because of her decreasing autonomy.

A 39-year-old woman with a history of ovarian cancer was admitted to the neuro-oncology service for progressive difficulty with coordination and ambulation, problems that progressed from incoordination to complete inability to walk in a 2 month period of time. After a lumbar puncture, the diagnosis of paraneoplastic cerebellar degeneration was made. Her cognitive functioning was unaffected, but she appeared depressed. The patient described how she had been able to resume her role as a single working parent shortly after completing cancer treatment. Her boyfriend had helped her cope with the sexual problems caused by the treatment; once the neurologic symptoms began to appear, however, the patient felt completely devastated and helpless about the loss of autonomy caused by these symptoms. In particular, she blamed herself for parenting difficulties with her increasingly rebellious adolescent daughter. Family meetings were helpful in bringing out their collective grief over the patient's loss of autonomy.

A role reversal often occurs in families of cancer patients. For example, if the breadwinner of the family becomes ill, the well spouse, by necessity, often adopts this role. The patient, in turn, assumes a dependent position, often needing family members to perform intimate physical care. The well spouse, in particular, is called on to adopt a parental-like role vis-à-vis the patient, assuming responsibility for the total well-being of the patient. The mode of communication between the patient and family changes dra-

matically, and family members must rely heavily on nonverbal cues to determine the patient's needs, which can be exhausting and frustrating for all.

Dementia or withdrawal caused by destruction of the brain is often interpreted by family members as a psychological event, depression, or loss of the desire to "fight the illness." The patient's waxing and waning behaviors caused by organic factors are thus sometimes viewed as volitional. Patients may have moments of extraordinary clarity, providing heartbreaking glimpses characteristic of pre-morbid individuals and highlighting their degree of suffering. Helping the family understand that the effects of the illness are more distressing when viewed by an observer with intact cognitive ability than may be experienced by the patient offers solace to many distressed families.

The principles of assessment of sexual dysfunction and sex therapy have been applied successfully to cancer patients and cancer survivors (Auchincloss, 1989; Schover, 1998). Sex therapy techniques can be valuable for neuro-oncology patients and their spouses who present with sexual disorders or alterations in sexual functioning stemming from the disease and its treatment. For example, women taking antiestrogen therapies for primary brain tumors can experience premature menopause with drying of the vaginal mucosa, which can lead to painful intercourse. Pain, in turn, can cause avoidance of sexual intercourse and decreased desire. Such problems can compound feelings of lost femininity and attractiveness and increase feelings of isolation.

Men can develop hypoactive desire as a result of the emotional and physical strains of treatment. Such problems can compound erectile difficulties caused by diminished physical state and medications. Often, if intercourse becomes untenable, male patients will avoid sexual intimacy nearly completely, increasing their sense of isolation and loss of control and compounding their feelings of diminished masculinity and personal power.

Behavioral techniques are an important aspect of sexual therapy and can help a couple to systematically increase intimacy. Such approaches often deemphasize intercourse until the couple has learned new ways to express intimacy while, in some instances, simultaneously unlearning problematic patterns of sexual behavior and avoidance set in motion by the cancer experience.

Couples are often unsure about the safety of intimacy during treatment for CNS cancer. The resulting loss of physical contact is isolating for both the patient and the partner. Intimate touching is safe and pleasurable and is often a fulfilling replacement for intercourse for patients with catheters or sexual dysfunction due to medications. Referral for sexual counseling can significantly improve quality of life for the cancer patient and spouse.

### Group Interventions for Patients and Families

The neuro-oncology treatment team at Memorial Sloan–Kettering Cancer Center maintains a psychoeducational support program for the spouses of CNS cancer patients. The group was established to enhance spouses' adjustment to the illness and to facilitate improved family/staff communication in order to improve inpatient and outpatient care. Goals are met by providing information, education, and emotional support; decreasing isolation and alienation through creation of a spouses' support network; and sharing concrete care-taking ideas and suggestions. Better family and staff communication results in timely planning of respite admissions, identification of relief caretakers, or organizing home visits by medical professionals, with intent to improve home care and reduce unnecessary admissions. Led by the interdisciplinary treatment team psychiatrist or psychologist, the oncology treatment team meets with family members twice monthly for 90 minutes, the first third of which is devoted to information and education on topics, including psychiatric effects of disease and treatment, social work services, and practical care-taking suggestions. The remainder of the session is devoted to supportive psychotherapy. The group averages 5 to 10 members each session and is attended by spouses of patients at all stages of disease course, as well as widows of brain tumor patients whose presence helps new group members prepare for the inevitable state of grieving.

A similar program at the M. D. Anderson Cancer Center actively encourages patients to participate with family members. Led by a neuro-oncology social worker and a psychiatric nurse specialist, the group meets monthly. Internal and external experts on primary and supportive aspects of care of the neuro-oncology patient are invited to discuss issues of interest and concern to group members. Following questions and discussion of the educational topic, the group continues to meet in a supportive psychother-

apy session. The group focuses on strategies for enhancing the health of patients and family members and of the family itself throughout the treatment process.

## PSYCHOSOCIAL IMPACT ON THE MEDICAL STAFF

The nursing and medical care of patients with neuro-oncologic illnesses are demanding and complex and are accompanied by frustrations not encountered by staff working with patients who have non-neurologic cancers. The inability to communicate easily with patients while administering high levels of custodial care is exhausting. The psychological reactions of staff members mirror those of family members, but staff members must also care for the grief-stricken family members. Patients' volatility and/or potentially physically assaultive behavior heighten the stress. Patients have a uniformly poor prognosis; treatment options are of limited benefit and can leave the patient more neurologically impaired than before treatment. Staff members often care for patients with high levels of suffering, many of whom require, but have not accepted, their need for hospice-type palliative care. Additionally, staff members are often provided less emotional support on a diverse and busy neurology service than they might encounter in the hospice setting where group support is a routine aspect of unit function.

Such problems are often reflected in some of the ethical dilemmas encountered in neuro-oncology, such as the application of resuscitation efforts. Patients whose disease affects their ability to communicate may never have had the opportunity to indicate their wishes regarding resuscitation and other aspects of treatment. Family members and staff often become divided over their understanding of the patient's wishes. Staff, wanting to avoid futile efforts to revive a dying patient who is unlikely to survive for long or who is not assured a substantive quality of life following a resuscitation effort, may pressure families to have "Do Not Resuscitate" orders written. Such pressure can put families and staff at odds and worsen the family's feelings of isolation.

Another dilemma is whether a patient without cognitive capacity would choose to have a potentially treatable medical complication (such as pneumonia) go untreated while he is slowly dying of a brain tumor. The issues inherent in administering treatments that essentially extend the life of dying patients can be very divisive for the staff. Physicians often see their role as requiring them to treat a potentially dangerous complication; the nursing staff, who generally spend more time with the patient, often observe the limitations in the patient's quality of life and more often are against extending the patient's life. Family members called on to act as surrogate decision makers are often conflicted, and their stress is transmitted to the staff.

In the psychology of the medical staff, the poor prognosis of patients with CNS tumors moves bereavement and grief issues to center stage. Grief has a tremendous impact on staff members in oncology units generally and is even more problematic on a neuro-oncology service. Patients with primary cancers that are outside the CNS are often admitted to the neuro-oncology service with CNS complications that mark the beginning of the terminal stage of illness. Additionally, the first appearance of neurologic symptoms are devastating losses for the patient and his or her family as the patient, for the first time, is struggling with cognitive changes that threaten independent functioning. Thus, patients and families on neuro-oncology services are likely to be more bereft than those encountered on other services where cure is still a viable possibility and where the patients are healthier and more capable of independent functioning.

Patients with primary CNS cancers and their families are in a near-constant state of mourning for the patient's loss of cognitive, motor, or speech functioning. Each admission seems to culminate in increasing neurologic deficits and the piecemeal loss of the patient's personality, sadly affecting the family and staff. "Professionalism" limits the extent to which the staff can express their feelings; overwhelming and unexpressed grief can render the clinician ineffective, but the complete denial of sadness precludes the empathic stance necessary to meet the emotional needs of the bereft. The mental health professional working on a neuro-oncology service must know how to detect pathologic grief reactions (Lindemann, 1944) in staff members. A high degree of somatic distress, preoccupation with images of a recently deceased patient, guilt about actions during the care of the patient, hostile reactions to the actions of other staff members, and even the adoption of traits of the deceased patient are signs of pathologic behavior that

should prompt a referral for individual counseling. Such symptoms of difficult or problematic grief mirror those of burnout and even post-traumatic stress disorder and can be managed through psychotherapy, altered forms of coping and self-expression, and work rotations.

Less pathologic forms of grief and mourning can be seen in the staff's reaction to the death of a "special patient." Various factors may facilitate a staff member's identification with a given patient, such as closeness in age or the patient's having been a healthcare provider. When special patients die the staff may participate in rituals such as attending the patient's funeral. The grief work that staff needs to accomplish for all the losses they suffer may be embodied in this process.

### A Group Intervention for Staff Members on a Neuro-Oncology Service

There are various ways in which the stresses experienced when working on a neuro-oncology service can be mitigated. For nurses, rotating demanding patients or difficult families is essential. Physicians-in-training benefit from close supervision and brief rotations. At Memorial Sloan–Kettering Cancer Center, in recognition of the high level of stress encountered on the neuro-oncology service, the psychiatry service started a weekly multidisciplinary support group for staff members called "Psychosocial Rounds." The structured, task-oriented group is co-led by a social worker, head nurse, and psychiatrist or psychologist.

Patients or family members who have been difficult to manage are discussed. The discussion emphasizes medical, nursing, social, psychological, administrative, spiritual, and ethical perspectives. Staff reactions to working in neuro-oncology are discussed, as are thoughts about palliative versus curative modes of patient care, coping with loss, and ethical beliefs. The group attempts to derive concrete plans for managing patients and their families. Staff members are encouraged to express themselves, but by staying focused on clinical issues they can maintain dignity and emotional control so they can remain professional in their interactions and prevent emotional reactions from becoming too personal. It is not unusual for staff members who are most affected by the topics discussed to approach group leaders for further private discussion. The group has been enormously successful in generating a sense of unity among the staff working in this high-pressure environment.

## ISSUES FOR SURVIVORS OF NEURO-ONCOLOGIC ILLNESSES

The poor prognosis of neuro-oncologic illnesses for most patients can lead healthcare providers to overlook issues relevant to the small subset of patients who survive free of disease for significant periods of time. While only approximately 5% of glioblastoma patients can expect a 5 year disease-free survival, depending on histology, 30% to 50% of anaplastic glioma patients can expect to be alive at 8 years after diagnosis (Levin et al., 2001). These patients often find it difficult to re-enter normal life.

The growing number of cancer survivors face many difficulties beyond living with the physical and emotional effects of their cancer experience, including discrimination by employers, the inability to secure health insurance, and changes in personal relationships. For survivors of neuro-oncologic illnesses, these issues can be complicated by the loss of cognitive and other functions that can render former occupations and interests impossible to pursue. For younger patients, those most likely to enjoy a lengthy period of survival from neuro-oncologic illness, this can cause a derailment of career plans and a return to dependency on parents and others that had been relinquished earlier in their development. Cognitive rehabilitation techniques that have been used for patients with head injuries and stroke can be a useful part of the recovery for brain tumor patients and are a valuable adjunct to supportive psychotherapy.

## CONCLUSION

The psychiatric and psychosocial issues in neuro-oncology are highly complex. The nature of the issues faced test the clinician's flexibility and understanding of organic and psychological disorders and require that the focus of treatment go beyond patients to include those around them. Despite the poor prognosis often associated with cancer in the nervous system, associated primary and secondary psychiatric disorders can be successfully treated with consequent improvement in quality of life for patients and families.

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