The reports of widespread suffering of pain in the United States are staggering. Over two-thirds of the United States’ employed workforce, or about 80 million employees, complain of pain-related conditions according to a 1996 published Lewis Harris Report. Following respiratory illnesses and family-related illnesses, pain is the third leading reason for sick days. Chronic nonmalignant pain affects about 34 million adults in the United States daily.

Pain is responsible for one-fourth of annual illness days off from work or about 50 million lost days per year. This lost work has been estimated at a cost of greater than $3 billion per year and approximately 170 million days of pain-related, short-term disability.

Chronic nonmalignant pain sufferers’ complaints last from months to years without discernible relief. The pain-related physical disability spreads to frustration, stress, anxiety, somatization, depression, often leading to multiple visits to multiple physicians without satisfactory relief.

According to the Michigan Pain Study of 1997, one in five adults suffer from chronic or recurring pain. No additional measure of dollar value has been placed on lost savings, insurance, self esteem, not to mention the overflowing effects on family, spouses and co-workers. Chronic pain leads to immense despair, depression, overdosing of pain medications, suicidal intentions and alcoholism. In addition unrelieved pain leads to autonomic nervous system and neuro-endocrine ramifications, eventuating in new somatic complaints. The immune system is altered by chronic pain bringing about new vulnerabilities and outcome changes. Persistent and uncontrolled pain can lead to cardiovascular system symptoms and signs, including tachycardia and hypertension or gastrointestinal dysfunction of vomiting or diarrhea, etc.

Among geriatric populations, pain recognition and management is becoming a major factor occupying increasingly more physician time and energy resources. Almost all individuals over the age of 65 will experience at least one major “painful” healthcare problem, including up to 80% of those living in nursing homes.

In the first article, Rollin M. Gallagher, MD, MPH, notes that “chronic pain continues to be poorly managed in our society.” There is well-documented need for improved care of pain and the social and economic consequences have been small in proportion to the severity of the problem. Dr. Gallagher notes a number of models for the control of pain and reviews aspects of the multi-disciplinary pain centers. It is noted, however, that such centers are not accessible to most patients because treatment is expensive and few centers are available where necessary. The “specialist in pain medicine” is emphasized by Dr. Gallagher as...
an essential feature of modern care. Cognitive skills of pain medicine are emphasized rather than procedural skills. Dr. Gallagher notes that the role of the specialist in pain medicine is not to simply provide “blocks” or opiates. Dr. Gallagher emphasizes the cognitive skills of pain medicine and urges that the well informed “specialist in pain medicine” be consulted early rather than as a last resort to provide a comprehensive formulation of the problem and to collaborate with the primary care physician in directing appropriate treatment.

Central mechanisms in pain are reviewed by M. O. Urban, MD and G. F. Gebhart, MD emphasizing that nociceptive input into the central nervous system is subject to modulation through spinal cord neuroplasticity and descending influences from supraspinal sites activated by a variety of environmental signals; i.e., persistent nociceptive input, behavioral and emotional stimuli. They emphasize the role of N-methyl-D-aspartate (NMDA) receptors and production of nitric oxide (NO) in central sensitization, hyperalgesia and chronic pain. The centrifugal descending modulation involves such supraspinal sites as the rostral ventromedial medulla (RVM). The descending modulatory influences from the RVM appear to selectively contribute to hyperalgesia observed in uninjured tissue, distant from the site of insult (secondary hyperalgesia) and involve NMDA receptors and production of nitric oxide. The authors discuss the role of modulatory influences in the CNS on the development and maintenance of chronic pain and hyperalgesia.

Headache disorders are reviewed by Joel R. Saper, MD. The primary headache disorders including migraine, cluster headache and tension-type headaches are contrasted with the secondary headache disorders associated with organic etiologies in which the distinctive pathologic process has head pain as a symptom. The pathogenesis of the various headache types are reviewed. Specifically, the treatment of migraine is broken down into four principles of treatment. First, the intensity of care required must be determined based on the severity of illness. Secondly, the clinician must determine whether the approach will be to use medication treatment or non-medical therapy or a combination. Thirdly, treatment of individual attacks, both symptomatic and abortive is compared with the necessity for prophylactic treatment. Fourthly, Dr. Saper notes the need to consider hospital care for the acute, most severe form of migraine and to foresee the potential of drug toxicity, dehydration, rebound or intractability.

Low back pain: evaluation and management in the primary care setting is the topic reviewed by Hubert L. Rosomoff, MD and Renee Steel Rosomoff, MBA, CRRN. Acknowledged is the major role in the identification of low back pain syndromes by the primary care physician. The need to have consultation with persistent low back pain syndromes is emphasized. The various myofascial syndromes mimicking root syndromes are identified. Multidisciplinary comprehensive pain center utilization for these most difficult patients is recommended to separate the neurologic, orthopaedic, neurosurgical issues. Special tests, including the merits and demerits of CAT scanning and MRIs and electrodiagnostic techniques are reviewed. Types of pain treatment facilities and referral selection criteria for the chronic patient are covered in depth. The authors offer the primary care physician recommendations for recognition and relief of acute pain syndromes and review the diagnostic clues concerning chronic pain disorders. The criteria for recognizing and selecting of patients for referral to multidisciplinary pain centers are presented for the specific pain syndromes.

Postinjury neuropathic pain syndromes are reviewed by Robert J. Schwartzman, MD and Jahangir Maleki, MD, PhD. Damage of nerve roots, plexinerves or central pain pathways generate persistent pain with no benefit to the organism and is termed neuropathic pain. Traction nerve plexus injuries and
entrapment neuropathies are thoroughly explained. The authors call our attention to the description of “reflex sympathetic dystrophy” recently re-named as the complex regional pain syndrome—CRPS. CRPS I exists if no nerve injury can be identified and CRPS II (causalgia) occurs if a specific nerve is damaged. Five major symptom complexes are noted in CRPS I/II: (1) pain; (2) autonomic dysfunction; (3) edema; (4) dystrophy and atrophy; (5) a movement disorder.

Chronic orofacial pain that is medically unexplained is discussed in the article by Joseph J. Marbach, DDS. Dr. Marbach notes the general notion that the etiology is unknown for such conditions as TMJ, orofacial phantom pain, burning mouth syndrome and trigeminal neuralgia. Most often physicians employ demographics and descriptions of the quality and location of the pain to create mutually exclusive categories and arrive at a diagnosis. Dr. Marbach reviews the definition, epidemiology, medical and surgical treatment modalities for each of these chronic orofacial pain disorders.

Painful peripheral neuropathies are reviewed by Drs. Philippe D. Vaillancourt and Helene M. Langevin. Painful neuropathies are usually a result of damage to the axon. Painful neuropathies are usually classified as affecting nerves diffusely or focally. The authors review the many systemic illnesses associated with painful symmetric polyneuropathies. Symptomatology and differential diagnosis is noted. A number of specific pain management therapies are noted with in-depth review of: antidepressants, anticonvulsants, Mexiletine and Lidocaine, Clonidine, opioids, NMDA (N-Methyl-D-Aspartate) receptor antagonist, topical agents such as Capsaicin and E.M.L.A. (eutectic mixture of local anesthetics), as well as the nonpharmacologic modality of TENS.

Hui Ming Chang, MD, MPH, reviews cancer pain management, noting that cancer is the second leading cause of death in the United States and that 67% of outpatients with metastatic cancer have significant pain problems with 36% of them having severe functional impairment. Pain becomes an overwhelming part of the care of the terminally-ill cancer patient. Overwhelmingly, the surveyed physicians have felt that these cancer patients have been significantly undermedicated with respect to pain management. The WHO has noted that 25% of cancer patients have severe pain without relief prior to their death that had reduced their activity, function, appetite and sleep, overall increasing their suffering, depression and increased risk of suicide. The etiology of cancer pain is noted in the following categories: (1) pain induced by the disease; (2) pain secondary to the treatment of cancer, such as surgery, chemotherapy, radiation therapy, immunotherapy; and finally, (3) pain unrelated to the cancer or its treatment, such as that of underlying diseases, including osteoarthritis, diabetic neuropathy and degenerative diseases. The author categorizes the various pain forms as: somatic pain, visceral pain, neuropathic pain. A number of common cancer pain syndromes are reviewed in depth, including: tumor infiltration of bone, spinal metastasis and cord compression, peripheral neuropathies, plexopathies due to tumor infiltration, mucositis. The available pharmacologic management modalities reviewed include NSAIDs, opioids, and a number of adjuvant drugs. The nonpharmacologic and interventional pain management issues are very nicely reviewed, including: physical and psychosocial therapies, radiation therapy, anesthetic and neurosurgical interventions, home, hospice and end-of-life care services. Toward the end of life the cancer patient requires very substantial supportive care for their pain-associated abnormalities. Much attention must be given, not only to the patient, but also to the families of the patients. The role of the primary care physician in assuming a principal role in management and coordinating of the patient’s care in this palliative phase of cancer treatment is emphasized.

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Psychiatric comorbidity in the management of the chronic pain patient is reviewed by David A. Fishbain, MD. The psychiatric comorbidities are divided into five categories. The first involves major depressive disorder in association with panic disorder, extremely common in the general population. The second major category of psychiatric comorbidity includes the presence of depression in association with antisocial personality disorder. Third is the psychoactive substance use disorder such as alcoholic dependence in association with major depression. Fourth is the category of psychoactive drug use disorders, including cocaine dependence in association with alcohol dependence. The most common comorbidity encountered by practicing physicians in association with the patient with chronic pain is depression. Overall, these comorbidities of psychiatric disorders significantly increase the disability from work, including sick leave, in the patients with chronic pain. A psychopharmacologic treatment approach is extremely important in the management of the patient with chronic pain. Decisions about chronic pain treatment should be based on a firm understanding of the psychiatric comorbidities.

Opioid use in the management of chronic pain is reviewed by Seddon R. Savage, MD. Standards for the use of opioids are changing rapidly. Primary care physicians are becoming more familiar with the complex chronic pain problems that require opioids and decisions regarding optimum pain management require an appropriate knowledge of the pharmacology and therapeutic use of these medications. Throughout time the beneficial qualities of opioids have been tempered with the association of abuse and addiction. The effectiveness of opioids as analgesics must be achieved while minimizing the negative of abuse and addiction. The availability of newer opioids in the treatment of chronic pain has brought physicians to realize the need for these medications earlier and with varying intensities of pain. The overall effectiveness of opioids, physical dependency, tolerance, addiction, pseudo-addiction and abuse, are reviewed. The effects of opioids on cognitive and psychomotor function and the impact of physical dependency are often factors weighing against the use of opioids in patients with chronic pain.

Opioid receptors including mu, kappa and delta associated with analgesia and side effects are explained by the author along with the various opioid narcotic medications active at each receptor type. Morphine, codeine, hydromorphone, hydrocodone and oxycodone are intrinsically relatively short acting mu opioid medications with a duration of approximately 3 to 4 hours. Methadone, fentanyl, meperidine, tramadol, propoxyphene mechanisms of actions are also developed in this chapter. Routes of administration, medication combinations and variability of dose requirements, rescue medications, protocols for changing opioids and withdrawal of opioids are developed. Careful structuring and monitoring of the opioid regimen is absolutely necessary. The opioids are effective and most often successful in the therapy of pain when combined with other pharmacologic and non-pharmacologic interventions.

Elliott S. Krames, MD describes the "interventional pain management" modalities. These include: pharmacologic therapy, such as nonopioid analgesics, opioid analgesics and adjuvant medications, nerve block techniques, neuroaugmentative or surgical interventions and neurodestructive interventions. More invasive interventions including peripheral and central neuroblocking techniques, sympathetic nervous system blocking techniques, continuous epidural or plexus anesthesia, continuous pleural anesthetic techniques, chemical, surgical and thermal neurolysis and neuromodulatory techniques, including TENS and others, are included in the review. Various nerve blocks for the trigeminal system, cervical plexus, sympathetic system and the chemical and thermal neu-
rolysis techniques plus implantable neuromodular system and devices are reviewed in an algorithm style.

Rollin M. Gallagher, MD, MPH, writes of the integration of medical, physical and behavioral therapies in the management of pain disorders. An in-depth explanation of the “biopsychosocial” model in the clinical process of pain management is developed by the author. The primary care physician is urged to conceptualize the complex interaction of physical, psychological and social factors that can help prevent or ameliorate the progression of pain disorders and chronic disability. The physician must rationalize pain medication pharmacology, understand the pain/tension cycle and biopsychological pain physiology. The author notes that “education is a critical element of treatment.”

“Road Blocks to Effective Pain Treatment” are analyzed by Richard L. Stieg, MD, Philipp M. Lippe, MD, Thomas A. Shepard, RN, PA-C. The authors discuss the broad range of social and political issues that create “road blocks,” including organized medicine’s failure to meet the needs of people in pain. Those factors include: (1) inadequate training of medical nursing and healthcare providers; (2) inadequate public and professional knowledge about psychosocial pain aspects and management resources; (3) fear of punitive action against those practitioners using opioids; (4) “charlatanism” in the area of pain treatment; (5) paucity of treatment guidelines and best practice standards; (6) “road blocks” to access of care by experienced pain medicine practitioners.

Pain Medicine itself is not fully recognized as a distinct specialty and is often confused with the subspecialties in pain management representing other specialties such as anesthesiology, physical medicine, psychiatry, clinical pharmacology, etc. The authors urge that the specialty of “pain medicine” achieve a clear identity as a legitimate and credible specialty.

The “road block” offered through central agencies, such as the DEA and State Medical Licensing Boards, is also offered as an area requiring special attention by pain medicine specialists. Pain organizations, such as the AAPM and APS, are urged to continue their charge of educating regulators to achieve more enlightened policies. Education in Pain Medicine is definitely needed at all levels, including undergraduate medical education, post-graduate and continuing medical education. Most undergraduate curricula do not venture into education on pain modalities beyond the course in pharmacology. Residency programs, in general, give short shrift to the understanding of pain pathophysiology and the available modalities of treatment of pain. The authors reach out to the ACGME and ask that special requirements be imposed on residency education curricula in all specialties to enable those physicians in training to gain a better appreciation of the patient in pain. Continuing medical education efforts in journals and seminars should be expanded, especially in the areas of postoperative pain, malignant disease pain, and the persistent chronic pain disorders. The managed care industry continues to offer a substantial “road block” to the availability of pain treatment modalities. A better understanding of workmen’s compensation and the significant differences in the language of the statutes and procedural rules of different states is essential. All physicians need to improve their awareness of the relationship of employers to injuries arising in the course of employment and those conditions that are proximately caused by acknowledged occupational injuries.

It is strongly urged that primary care physicians exercise responsibility in recognizing the scope of the pain medicine problem and obtain the education needed to dissect through the “road blocks.” Early referral to the appropriate Pain Medicine specialist in a proactive fashion is necessary to offer relief to the patient and prevent permanent disability. The primary care physician stands at
the crucial crossroads of the patient in pain having to deal with all of the social, political, economic, and medical necessities of the pain sufferer.

References


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