

This Year the Analgesic Market is Expected to Be Worth \$50 Billion, with Predictions Saying the Market Will Reach \$105 Billion By 2015

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The worldwide analgesic market is estimated to be worth \$50 billion during the year 2005 and is expected to increase to \$75 billion by the year 2010 and \$105 billion by the year 2015. Calculations are based on the epidemiology of various painful conditions and the development of analgesic drugs and devices. Unfulfilled needs for analgesics are identified and strategies are outlined to develop markets for analgesic drugs. The report is supplemented with 53 tables 15 figures, and 460 selected references to the literature.

Over 500 companies have been identified to be involved in developing or marketing pain therapeutics and 122 of these are profiled in the report along with 105 collaborations. These are a mix of pharmaceutical companies and biotechnology companies.

This report describes the latest concepts of pathomechanisms of pain as a basis for management and development of new pharmacotherapies for pain. Major segments of the pain market are arthritis, neuropathic pain and cancer pain. Because pain is a subjective sensation, it is difficult to evaluate objectively in clinical trials. Various tools for pain measurement are described, including brain imaging.

Most of the currently used analgesic drugs fall into the categories of opioids and nonsteroidal antiinflammatory drugs (NSAIDs) such as COX-2 inhibitors. Non-opioid analgesics include ketamine, a N-methyl-D-aspartate receptor antagonist. Adjuvant analgesics include antidepressants and antiepileptic drugs used for the treatment of neuropathic pain. Management of pain is multidisciplinary and includes both pharmacological and non-pharmacological methods such as acupuncture, transcutaneous electrical nerve stimulation and surgery. Various pain syndromes require different approaches in management, for example, the main category of drugs for migraine are triptans such as sumatriptan.

Drug delivery is an important consideration in pain treatment. Controlled release preparations provide a steady delivery of analgesics. Well-known non-injection methods such as transdermal, pulmonary and intranasal application have been used. Topical analgesics and local anesthetics are also available. Devices such as implanted pumps are used for delivery of drugs such as opioids intrathecally (introduction into spinal subarachnoid space by lumbar puncture) in patients with cancer pain.

The wide variety of drugs in development includes opioid receptor ligands, bradykinin antagonists, newer COX inhibitors, glutamate receptor antagonists, substance P and neurokinin receptor antagonists, P2X2 neuron receptor antagonists and nitric oxide-based analgesics. A number of cannabinoids are also in development for pain. Fish-derived tetrodotoxin was initially focused on indication of opiate addiction withdrawal but is found to have an analgesic action as well. Cone shells contain therapeutically useful peptides including the conotoxins, and one such peptide, ziconotide, has been approved. Various cell and gene therapies are also being developed for the management of pain.

Advances in molecular and biological techniques are markedly advancing our understanding of pain. Understanding the pathophysiology of pain is an important factor in discovery of rational therapies for pain. Advances in pharmacogenomics and pharmacogenetics are enabling the development of personalized approaches to the management of pain.

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