Sorting Out the Options for Topical Analgesic Therapy

Topical agents can effectively manage musculoskeletal pain, but selection can be a challenge. In part one of a two-part series, we’ll look at the condition and the treatment options.

Two popular classes of pain management treatments are applied to the skin, but the main differences lies in what happens next: topical analgesics exert their analgesic activity locally and without significant systemic absorption, while transdermal analgesics require systemic absorption for clinical benefit. Although transdermal treatments may allow the analgesic to penetrate deeper, there are many situations where a topical solution could be a safer and still very effective choice. To offer an example of this, we will review how topical agents can be used to manage musculoskeletal pain this month and next.

Hurts to the Bone
Soft tissue injuries and osteoarthritis are both commonly experienced musculoskeletal pain states. While various systemic analgesics and injection therapies are used in this setting, this is not done without the risk of significant side effects especially with long-term and repeated use. The use of topical analgesics for these heterogeneous conditions is being studied.

The successful development of topical analgesics for these conditions, therefore, could be of great value and importance to both the patient as well as the treatment provider. There have been a number of studies completed, usually outside of the United States, which provide us with whatever evidence exists for their use in a clinical setting. So, although we may be limited by the lack of research pertaining to these treatments and sometimes even their availability, we can still use this information to treat our patients who are in pain.

Selecting an Agent for the Mission
Several important factors in choosing an analgesic agent include its efficacy, its side effect profile, its ease of administration and its cost. The ideal agent would be effective in relieving pain and at the same time be well tolerated, easy to use and not too costly. It’s an unfortunate fact of our specialty that the efficacy of many analgesic agents is undermined by their side effect profile, toxicities and drug-drug interactions.

In general, the risk of and severity of significant adverse effects, as well as of drug-drug interactions, is reduced with a topical agent compared with a similar agent given systemically. This benefit alone may be of great practical value for a patient who is also actively using systemic medications for other medical disorders.

For instance, consider a 73-year-old female patient who suffers from hypertension, hyperlipidemia and diabetes mellitus. She now needs analgesic treatment for his osteoarthritis (OA). She is already using a number of medications for her different medical conditions and her physician is concerned about prescribing any analgesics, including non-steroidal anti-inflammatory medications (NSAIDs), because of the potential to adversely affect the other conditions. Assuming that the patient can experience an acceptable degree of pain relief with the use of a topical analgesic in this setting, using a topical agent here may offer several advantages over a systemic agent due to the lack of drug-drug interactions.

From a commercial viewpoint, there seems to be great interest in the development of new topical analgesics. Among the agents being developed or being considered for development as topical analgesics are NSAIDs, opioids, capsaicin, local anesthetics, antidepressants, glutamate receptor antagonists, alpha-adrenergic receptor agonists, adenosine, cannabinoids, cholinergic receptor agonists, gaba agonists, prostanoids, bradykinin, ATP, biogenic amines and nerve growth factor. There have been many recent studies on these agents, but for practical purposes few new choices are ready to be applied in a clinical setting.

Hence, the physician must keep in mind that not all topical analgesics are commercially available agents. This often means being aware of the differences between the topical analgesics that are FDA-approved and commercially available from those that may be manufactured on an individualized basis by a specialized compounding pharmacy. Certainly not all topical analgesics currently in use and/or prescribed by health care providers are commercially available products and, for years, many health care providers used compounding pharmacies to obtain custom made agents through other means.

For the sake of simplicity, we will only review those topical agents which are commercially available or for which there is clear evidence they were manufactured in a consistent and reliable manner. Look for more in next month’s column. PN