Is Acid Painful? 酸痛不痛

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“Do you know my sng?” In Chinese societies, pain is often described as a compound word “sng-pain” (痠痛), in which sng (pronounced as sə-ng, 痠) is a Taiwanese word that represents the state of feeling sore. However, although chronic sng is a major complaint in many chronic pain diseases, sng is notoriously ignored in current medicine and is always treated as a mild symptom of pain. In pain clinics, acid/soreness sensation is a characteristic sensory phenotype of various chronic pain syndromes, such as fibromyalgia and radicular pain. Physiologically, sensing tissue acidosis is an important function of somatosensory nerves to response to noxious stimuli. However, acid/soreness sensation is also a sign of successful analgesia for acupuncture and many types of physical therapy. Thus, the nature of acid/soreness sensation is not always nociceptive (painful) and could be anti-nociceptive. To facilitate research into neurobiological mechanisms of acid/soreness sensation, we propose a new concept called “sngception (sng- ception)” to describe the response of the somatosensory nervous system to sense tissue acidosis and to distinguish it from nociception (pain sensation). Although proton-sensing molecules contributing to sngception are not known, candidate membrane proteins include acid-sensing ion channels (ASICs), transient receptor potential channels (TRPs), proton-sensing G-protein-coupled receptors, etc. We have thus designed a series of genetic manipulation to explore possible proton-sensing molecules and/or neurons involved in sngception in mouse models. Moreover, from clinical aspects, we demonstrate sng (soreness) and pain are two distinguishable symptoms with different clinical impacts on patients of chronic low-back pain and fibromyalgia. Together, understanding the patients’ sng will provide new insight for effective treatment for chronic “sng-pain”.