

Pain therapy in MS

Taken from an interview at August 8 2000 with Dr. Claude Vaney, Montana – Vermala, Switzerland, 8 August 2000

One of your specialities is pain therapy. More than 50% of people with MS complain about pain. Frequently conventional analgesics are not very effective. Are MS-related pains of a different nature? What kind of pain therapy can be offered to those in need

The definition of pain is an unpleasant sensation and feeling, which in general is connected to currently existing or possible tissue damage. The perception of the pain is influenced by the momentary emotional state, fear, depression and other psychological and social factors. Pain suffered earlier also plays a role in the momentary experience of fresh pain.

The conduction of painful sensations between the peripheral body regions, i.e. the skin, bones, joints etc. and the central nervous system in humans takes place via the myelinated A delta fibres on the one hand, and on the other hand via the demyelinated C fibres. Pain receptors in the skin react to stimuli such as pressure, heat and cold. In the internal organs such as stomach, intestines or bladder, pain is stimulated by stretching, spasm and inflammation. Skeletal muscles trigger pain signals when there is insufficient blood circulation or when they have suffered injury.

The rapidly transmitting A fibres send out immediate signals if the body is threatened and initiate an immediate physical reaction.

The slowly transmitting C fibres on the other hand initiate a dull uncomfortable sensation hard to localise in the body and lasts longer than the triggering pain stimulation. This pain is usually followed by a muscle stiffness of the kind known to MS sufferers as increased spasticity.

Pain information finally reaches the different parts of the brain via the spinal cord and relay stations. While the cell groups on the surface of the brain (cerebral cortex) analyse the pain signals with regard to their localisation, brain regions deeper down (thalamus, limbic system), responsible for consciousness and emotional reactions, process the incoming information according to their emotional character. Probably the diffuse, dull and burning pain sensations we experience are a product of this slower route, as well as the unspecific, unpleasant feelings associated with pain.

Neurogenic or central pain

If the damage is located in the spinal cord or in the brain itself, then another sort of pain arises, neurogenic or central pain. The sufferer has the feeling that the pain has been induced on the skin surface. Frequently such pain has a burning, stinging or oppressive character. It even can create different sensations within the same person. In a healthy person, the spinal cord performs an inhibitory or filtering function which stops conduction of such stimuli. But if the nerves are damaged, however, as in the case with MS, this function no longer works reliably. The inhibitory effect of certain nerve tracks are no longer intact and the A and C fibres can bombard the brain with unpleasant and painful sensations. An irksome, almost continuous and uncontrolled flood of information is the consequence.

This explains why conventional pain-killers are not effective for neurogenic pain: they primarily influence the peripheral and central stimulus transmission at the coupling stations.

Treatment approaches

Although such forms of central pain are hard to influence, certain kinds of antidepressant drugs such as amitriptyline, fluoxetine and sertraline can be tried to inhibit the uninhibited spread of the stimulus. The body produces its own substance, serotonin, which works as pain inhibitor and is broken down more slowly under the influence of antidepressant drugs. Moreover, some of these medications also have a mood-improving calming and sedative effect as well. Anticonvulsant drugs can also be effective by stabilising the nerve cell membrane. Such drug products can be used primarily during acute attacks of pain as in trigeminal neuralgia cases, e.g. carbamazepine, clonazepam, gabapentin. The use of cannabis is discussed elsewhere.

How does one find the ideal pain therapy for the individual patient in practice?

We use the "trial and error" principle in finding one of the above drugs and administering dosages step by step in increasing amounts until an optimal effect is achieved. If we see no effect, we have to try another drug. This search can be a disappointing experience for the patient and is sometimes long and arduous, and does not always meet with success.

I find it very important to inform the patient in detail about the various medications. If the MS sufferer does not understand the way a medication works in the body, he or she wonders why antidepressant and antiepileptic drugs are being prescribed. This can lead to misunderstandings and a situation where the drugs are not taken regularly or for as long as would be necessary. Sometimes a therapy is stopped too soon. There is no perfect remedy.

In some cases of central pain, similar to the chronic pain states manifested in other diseases, it can help to attempt behavioural and psychotherapeutic procedures, including suggestive methods and distraction strategies.

Whom should people with MS turn to when they suffer pain?

They should first of all speak openly with their doctor. If together they do not find a solution, then they should involve a neurologist or visit a special pain clinic.

References

For further reading on the subject of pain:

- Howarth AL. Pain management for multiple sclerosis patients. *Professional Nurse* 2000;16(1):824-826.
- Smith PF. Cannabinoids in the treatment of pain and spasticity in multiple sclerosis. *Current Opinion in Investigational Drugs* 2002;3(6):859-864.
- Vaney C, Brenneisen R. Cannabis: Hilfreich bei Multipler Sklerose [Helpful in Multiple Sclerosis] [Article in German]. *Der informierte Arzt / Gazette Médicale* 1999;20:233-236.