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Newsletter to Health Professionals

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Management of spasticity

Recommendations from the experts in spinocerebellar disorders by the Medical and Paramedical Committee of AFAF, CSC and ASL

Edito

Along with muscle weakness, spasticity is one of the reasons for consultation by patients with familial spastic paraparesis or Friedreich's ataxia. This symptom is the only element of pyramidal syndrome that is currently accessible to medical or medical and surgical treatment. During the last decade, advances have been made both in the study of the mechanisms responsible for spasticity and in methods of management, with improved access to certain treatments.

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Questions to be considered...

When should spasticity be treated?

The initiation of antispasticity treatment is almost never urgent and enough time should be allowed for proper analysis of the disorder before deciding to prescribe antispasticity treatment. It may be difficult for the patient to distinguish between discomfort linked to spasticity and discomfort linked to motor deficit as both will be included under the term "stiffness". Antispasticity treatment should be prescribed only for the purposes of improving function or comfort, and not all spasticity ascertained on clinical examination will be treated automatically. For example, spasticity of the triceps surae does not have to be treated simply because it exists, if an examination of walking shows that discomfort is caused mainly by motor deficit of the psoas muscle which is impeding the patient's gait.

Criteria for the treatment of spasticity:
Spasticity must interfere with at least one of the following activities:
- Getting into bed or an armchair
- Expression of preserved motor capacities (walking, gripping, etc.)
- Taking care of hygiene, dressing, toileting
- Or it must cause pain

What are the options for treatment?

1 Pharmacological treatment

Oral

Various substances are available for oral treatment:
- Baclofen (Lioresal®). Doses may be increased if necessary up to 90 to 120 mg daily. In certain cases of severe spasticity, intrathecal administration of baclofen may be proposed (cf. below)
- Dantrolene (Dantrium®) requires regular monitoring of liver function
- Diazepam (Valium®) shows good efficacy in nocturnal spasticity but must be avoided in ataxia (cf. Newsletter No. 1)
- Gabapentin (Neurontin®) was initially an antiepileptic drug, but is also used for certain types of pain. It is used without marketing authorisation for the indication of spasticity (and can therefore legitimately be used only as second-line treatment) but its tolerability and efficacy are very satisfactory

Oral antispasticity treatment is used with caution in cases of diffuse spasticity owing to the risk of functional aggravation,

in particular, in "walking" patients. Systemic antispasticity treatment should start with monotherapy, with doses being increased in stages to improve their clinical tolerability (in particular, with dantrolene). More than one antispasticity agent may be combined if the efficacy of the appropriate dose of monotherapy is inadequate.

Intrathecal treatment

Where spasticity becomes too diffuse and is not controlled by oral treatments, the use of a continuous intrathecal baclofen infusion pump ("Lioresal® pump") may be proposed. The recommendation must be evaluated and discussed with the patient as part of a specialised consultation.

2 Local antispasticity treatment

• Botulinum toxin

The efficacy of the injections is good, subject to correct identification of the hyperactive or spastic muscles, injection under electromyographic guidance and the use of sufficient doses. The main disadvantage is the cost of the product. The duration of action is short (around 3 months) and the injections therefore need to be repeated 3 to 4 times a year.

• Alcoholisation of nerve trunks or motor points

This traditional technique still has some indications and is used, for example, for certain nerve trunks innervating bulky muscles which would require high doses if botulinum toxin were to be used.

3 Surgical treatment

The use of surgery is proposed in the context of multidisciplinary consultations with the surgeon, the specialist in physical medicine and rehabilitation and the neurologist. The most common neurosurgical procedure for spasticity is a selective partial neurotomy (soleus nerve, median nerve, etc.) allowing hypertonia to be reduced without impairing motor strength. It may be helpful to perform an orthopaedic procedure at the same time, such as tendon lengthening, arthrodesis, or tendon transfer (for example, partial anterior tibial tendon transfer when this muscle causes a varus deformity that interferes with walking).

Who prescribes the antispasticity treatment?

Antispasticity treatment can initially be prescribed by the neurologist. More severe or complicated cases of spasticity require specialised consultations in departments of physical medicine and rehabilitation, where more extensive evaluations and specific treatments can be undertaken.

Physiotherapy

Physiotherapy has an important role in the prevention of complications linked to spasticity, in particular in the prevention of muscle contractures. It is important to perform muscle-stretching exercises in each physiotherapy session, but also to teach the patient to perform self-stretching exercises outside the sessions where possible. Although physiotherapy techniques for inhibiting spasticity are useful for encouraging stretching exercises, their effect is transitory and rarely lasts beyond the session. However, stretching sessions can in the longer term lead to an improvement in the phenomena of muscle cramps or "heaviness" felt by the patient.

Muscle strengthening sessions should be prohibited, unless otherwise indicated on the medical prescription.

Physiotherapy sessions can be performed on the same day as the botulinum toxin injection. It may even be helpful to increase their frequency in the weeks following the first injections so as to optimise the effect of the muscle-stretching exercises.

The management of patients consulting for troublesome spasticity has in recent years improved as a result of a better understanding of treatment techniques and the introduction of specialised consultations. The next step is now to increase opportunities for patient access to this specialised management.

Drawn up by the Medical and Paramedical Committee of AFAF, ASL and CSC.

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