

Guidelines to be followed by centres, services and units in order to be designated as Reference Centres, Services and Units of the National Health System, as agreed by the Interterritorial Board

41. BRAIN NEUROMODULATION OF REFRACTORY NEUROPATHIC PAIN

Neuropathic pain is defined as pain initiated or caused by a primary injury or dysfunction in the nervous system. Neuropathic pain is classified in terms of the aetiological diagnosis of the neuropathy (e.g. Diabetic neuropathy pain, postherpetic neuralgia, post-traumatic neuralgia) or anatomical injury (e.g. Central pain, peripheral neuralgia). Within the neuropathic pain, **central pain** is defined as pain caused by a primary injury or central nervous system dysfunction. It has a high prevalence in bone marrow and brain injuries, mostly being caused by a trauma. An incidence of 10% is estimated for strokes and of 6.4-9.4% for bone marrow injuries (traumatic, vascular...). Patients suffering from this type of problems, beside central pain, often show movement disorders due to the neurological injury.

Brain stimulation is indicated after failure of all types of pharmacological and psychological treatment. Structures where stimulation takes place are the periaqueductal gray matter, anterior limb of internal capsule, thalamus (ventral posterolateral nucleus), hypothalamus (posterolateral region), and motor cortex stimulation.

Pathologies susceptible to this technique are: facial anaesthesia dolorosa, thalamic syndrome, phantom limb syndrome, brachial plexus avulsion, and Horton's cephalalgia.

Beneficial results of this technique according to several assessment indexes fluctuate between 62-70%.

A. Rationale for the proposal

► Epidemiological data on refractory neuropathic pain (incidence and prevalence).	Incidence of neuropathic pain is unknown. Daily incidence of neuropathic pain in Spanish neurologic consultation is estimated in 1.3%. Prevalence of neuropathic pain is unknown. It is estimated in 8% in the general population.
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► Data on the use of brain neuromodulation for refractory neuropathic pain.	Approximately 20 surgical procedures are performed in a year in the National Health System.
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B. Guidelines to be followed by Centres, Services and Units in order to be designated as Reference Centres, Services and Units providing brain neuromodulation for refractory neuropathic pain

<p>► Experience of the Reference Centres, Services and Units:</p> <ul style="list-style-type: none"> - Activity: <ul style="list-style-type: none"> • Number of brain neuromodulation procedures for refractory neuropathic pain that should be performed in a year to ensure an adequate care. - Other data: research on the subject, postgraduate teaching, continuing training, publications, etc. 	<ul style="list-style-type: none"> - 5-10 brain neuromodulation surgical procedures. - Accredited postgraduate teaching: Unit participation in the internship and residency programme in the areas of neurology, neurosurgery and neurophysiology of the Centre. - Participation in research projects and publications in the field^a. - Continuing training programme standardized and authorized by the centre's board of directors in the areas of neurology, neurosurgery and neurophysiology. - Clinical multidisciplinary sessions, at least once a month, in order to make decisions and coordinate treatments.
<p>► Specific resources of the Reference Centres, Services and Units:</p> <ul style="list-style-type: none"> - Human resources required for adequate 	<ul style="list-style-type: none"> - Multidisciplinary care: neurosurgeons, neurophysiologist, neurologist.

<p>performing of brain neuromodulation for refractory neuropathic pain.</p> <p>- Basic education of the team members ^b.</p> <p>- Specific equipment required for the adequate performing of brain neuromodulation for refractory neuropathic pain.</p> <p>► Resources from other units and services besides those belonging to the Reference Centres, Services and Units required for the adequate performing of brain neuromodulation for refractory neuropathic pain.</p>	<ul style="list-style-type: none"> - Nursing and surgical staff. - Neurosurgeon with experience in functional neurosurgery techniques with more than 100 brain neurostimulation procedures. - Neurophysiologist with experience of more than 100 procedures in functional neurosurgery including deep brain recording techniques, evoked potentials and neurostimulation. - Neurologist with more than 2 years experience in patients with neuropathic pain. - Nursing staff with more than 2 years experience in functional neurosurgery. - Stereotaxis system, MRI and CT scan compatible. - Operating theatre isolated from magnetic fields. - Mobile radiology equipment. - Craniectomy standard surgical equipment. - Equipment for recording of brain bioelectric activity and electromyography. - Equipment for deep brain stimulation and visual and somatosensorial evoked potentials. - Anaesthesia services/unit. - Intensive care services/unit. - Radiodiagnosis services/unit, including CT scan and MRI, with at least one radiologist with more than 2 years experience in functional neurosurgery techniques. - Psychiatry services/unit and or clinical psychology services/unit with experience in patients with neuropathic pain. - Rehabilitation services/unit with experience in patients with neuropathic pain.
<p>► Procedure and clinical results indicators of the Reference Centres, Services and Units ^c:</p>	<p>The indicators will be agreed with the Units that will be designated.</p>
<p>► Existence of an adequate IT system</p>	<ul style="list-style-type: none"> - Filling up the complete MBDS of hospital discharge.

<p>(Type of data that the IT system must include to allow identification of the activity and evaluation of the quality of the services provided)</p>	<ul style="list-style-type: none"> - The unit must have a <i>registry of patients</i> with refractory neuropathic pain who have undergone brain neuromodulation which at least must include: <ul style="list-style-type: none"> - Medical record number. - Date of birth. - Sex. - Patient's habitual region of residence. - Admission date and discharge date. - Type of admission (Emergency, planned, other). - Type of discharge (Home, hospital transfer, voluntary, death, transfer to a healthcare centre, other.) - Service in charge of patient's discharge. - Main diagnosis (ICD-9-CM). - Other diagnosis (ICD-9-CM). - Diagnostic procedures provided to the patient (ICD-9-CM). <ul style="list-style-type: none"> ♦ Therapeutic procedures provided to the patient related to brain neuromodulation surgical procedure: Type of procedure and date when it was performed. <li style="padding-left: 40px;">Number of hemispheres involved in the surgery. ♦ Other therapeutic procedures: Type of procedure and date when it was performed. - Surgical complications (ICD-9-CM). - Monitoring: Completion of indicators 6, 12 months after and yearly. - The unit must have the required data which should be sent to the Spanish National Health Service Reference Centres, Services and Units Appointment Commission Secretariat for yearly reference unit monitoring.
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^a Criteria to be assessed by the Appointment Commission.

^b Experience will be accredited by certification from the hospital manager.

^c Clinical results standards, agreed to by the experts group, will be assessed, initially by the Appointment Commission, while in the qualification process, as more information from the Reference Centres, Services and Units is being obtained. Once qualified by the Appointment Commission, the Quality Agency will authorize its compliance, as for the rest of guidelines.

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