DEEP BRAIN STIMULATION (DBS) IS READY FOR CLINICAL USE IN REFRACTORY EPILEPSY – NO

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It is well accepted that about one third of all epilepsy patients are suffering from so-called pharmacoresistant epilepsy. Out of these only a maximum percentage of 20 are candidates for resective surgery. This leaves more than 20% of all epilepsy patients where new methods for more effective treatment are being sought after. In principle all these patients are candidates for epilepsy surgery with implanted devices. Here vagus nerve stimulation with more than 20.000 patients worldwide has already an established position in the epilepsy treatment. Despite the fact that this technique is rather non-invasive (no-intracranial implantation), ideal candidates have not been identified as yet, and seizure freedom is rarely achieved. Deep brain stimulation is more invasive. Electrodes can be implanted in the hypothalamus, or the nuclei of the thalamus or even in the epileptic focus. The principle that either a neuronal circuit is disturbed, or the focus is activated in such a way that it is unable to produce seizures appears to be a good idea. However, the invasive approach limits controlled studies. Since there is no real controlled study available, the technique is still rather experimental. In addition, the high variability of stimulation parameter and possible sites of stimulation make it very difficult to find ideal positions and ideal stimulation parameter for these techniques. Although deep brain stimulation has been used in the fifties and sixties already a lot, (stimulation of the cerebellum) it has not until today found its place, despite the fact that later evaluations showed a considerable number of seizure free patients after many years.