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| --- | --- | --- | --- | --- | --- |
| **Authors and year of publication** | **Procedural-related adverse events intracranial hemorrhage** | **Hardware-related adverse events or other complications** | **Stimulation-related adverse events** | **Behavioral/cognitive changes** | **Activities of daily living** |
| **Vonck et al. 2002 (15)** | No | No | No | No neuropsychological  deterioration | NR |
| **Tellez-Zenteno et al. 2006 (16)** | No | No | No | No worsening during on period regarding depression,  no neuropsychological differences between on and off periods  No subjective memory differences between on and off periods | No worsening in on period regarding QoL, clear improvement when compared to off period |
| **Velasco et al. 2007 (17)** | No | 3 patients were explanted after 2 year of stimulation due to skin erosions and infection that started 24-26 months after surgery, Skin erosions and infections started at the mastoid bone (connection side) | NR | No memory decline under unilateral or even bilateral DBS | NR |
| **Boon et al. 2007 (19)** | 1 pt had asymptomatic hemorrhages along the trajectory of depth electrodes | No | No | No changes in neurophysiological testing | No |
| **MacLachlan et al. (20)** | No | No | No | Worse neuropsychological assessment in 1 pt | NR |
| **Boex et al. 2011 (21)** | No | 1 electrode displacement needed revision  1 electrode fracture requiring replacement | No | Verbal and visual memory normal, psychiatric assessment revealed no changes  No cognitive or psychiatric impairments | NR |
| **Vonck et al.**  **2013 (24)**  **previously reported by Boon et al.** | 1 pt had asymptomatic hemorrhages along the trajectory of depth electrodes | A revision of a connection cable,  IPG removal due to infection | Acute seizure induction due to high output voltage | No impairments in neuropsychological performance | NR |
| **Cukiert et al. 2013 (22)** | No | 1 pt had explanation of the device due to infection related to trauma. | No | No self-reported memory deterioration. | NR |
| **Min et al. (28)** | No | No | No | NR | NR |
| **Jin et al. 2016 (29)** | No | No | No | No postoperative neuropsychological deterioration | NR |
| **Lim et al 2016 (30)** | No | No | No | No disturbances in sleep patterns and behavioral changes | NR |
| **Cukiert et al. 2017 (25)** | No | 2 pts with local skin erosions treated by antibiotics | No | NR | NR |
| **Vazquez-Barron et al. 2021 (31)** | No | 1 DBS electrode fracture with reimplantation | Transient preserving ideas in 1 pt. | Neuropsychological evaluation not changed | In 4 among 6 pts positive influence on daily living activities |
| **Saucedo-Alvarez et al. 2021 (32)** | No | No | Paresthesia over V2 branch of trigeminal nerv due to gasserian ganglion stimulation | Improvement in all neuropsychological tests | No significant changes in QOLIE-89  2 pts unemployed before surgery return to work |
| **Cukiert et al. 2021 (26)** | No | IPG infection and explanation 23 months after surgery | No | Lack of formal neuropsychological data | NR |
| **Wang et al. (33) 2021** | No | No | No | No significant decreases in intelligence or verbal and visual memory | NR |

Table. 2 Adverse events including procedural, hardware and stimulation related complications as well cognitive/emotional outcomes following hippocampal DBS in patients with TLE. Abbreviations: NR – not reported, pt – patient, pts – patients, QoL – quality of life, QOLIE-89 - Quality of Life in Epilepsy Inventory, IPG – implantable pulse generator.