

## An unexpected recovery from vegetative state after a long-time period: the role of cognitive rehabiliation

M. Torrisi, R. De Luca, A. Piccolo, G.Maresca, P.Tomasello, M. Berenati, A. Olivo, P. Bramanti, R. Calabrò

Neurorehabilitation Laboratory-IRCCS Centro Neurolesi, Messina

**Objective.** Vegetative state (VS) is a chronic syndrome characterized by no evidence of awareness of environment, absence of interaction and response to stimulations. It occur after a severe cerebral damage and an awakening from coma but, generally, lasts several years before death. In literature we can find really few cases of recovery from VS, particularly after many years.<sup>1,2</sup> We have described a case of unexpected recovery after three years, arguing that a constant and repeated cognitive rehabilitation could be facilitated this result.

**Matherials and methods.** A 68 years old woman was admitted in our rehabilitation centre in a vegetative state occurred after an aneurysm ropture. We executed a multisensorial stimulation therapy for the first three years and a reality orientation program (ROT) after the appearance of first signs of awareness, twice daily in 60-minutes treatments. To evaluate cognitive status of patient we have utilized, at time intervals, the following scales: Glasgow Coma Scale (GCS), Coma Recovery Scale (CRS) and Levels of Cognitive Functioning (LCF).

**Results.** After a long period (three years) of absence of response to stimulation, patient started to catch the therapist's gaze, answer a question and execute some simple commands as open mouth or close eyes. Later, patient has become able to show spontaneous speech, make some associations and categorizations and verbalize her emotions appropriately. At the beginning she reported the following scores: LCF 1-GCS 4-CRS-R 6. After three years we evaluated her as an emerging minimally conscious state (LCF 2-GCS 9-CRS-R 9) and finally, after four years, we found noticeable improvements of consciousness state (CRS-R 19-GCS 11-LCF 4.)

**Discussion and Conclusions**. The criteria adopted to frame vegetative state consider it as irreversible if lasts more than 12 months after traumatic injury and 3 months after non traumatic.<sup>3</sup> This case shows that a recovery after a long time period is possible, even though uncommon. People who are in a vegetative state could have important advantage from an accurate and repeated cognitive rehabilitation.

## References

- 1. De Tanti A, Saviola D, Basagni B, Cavatorta S, Chiari M, Casalino S, DeBernardi D, Galvani R. Recovery of consciousness after 7 years in vegetativestate of non-traumatic origin: A single case study. Brain Inj. 2016;30(8):1029-34
- 2. Sancisi E, Battistini A, Di Stefano C, Simoncini L, Simoncini L, Montagna P, Piperno R. Late recovery from post-traumatic vegetative state. Brain Inj. 2009Feb;23(2):163-6
- 3. Multi-Society Task Force on PVS.. Medical aspects of the persistent vegetative state (1). N Engl J Med. 1994 May 26;330(21):1499-508. Review

