Treatment of Spasticity-related Pain Using Botulinum Toxin Can Improve Patient Satisfaction

I. Mazzù, S. Di Santo, C. Caltagirone

Santa Lucia - Neuroscienze e Riabilitazione, Roma

Background

About 65% of patients with spasticity report pain, most frequently related to movements (1). Up to 80% of individuals with spinal cord injury suffer chronic pain, of musculoskeletal, neuropathic or visceral type, and pain and spasticity frequently co-occur (2). Moreover, pain is frequently observed in dystonia, in particular in about 70% of patients with cervical dystonia (3) and in patients suffering from stroke spasticity. In several studies, its prevalence varies largely (10%-70%) in stroke patients (4).
Botulin toxin (BoNT-A) is currently used for treatment of excessive muscle contraction in several neurological diseases, including stroke and dystonia. Contextually, increasing studies demonstrate usefulness of Onabotulinum in reduction of pain in various chronic pain syndromes, and in particular in pain related to spasticity (5). In the last years, some studies showed that pain seems have more impact on quality of life (QoL) than spasticity (2), but none, at our knowledge, evalued patient satisfaction in regard to treatment.
We aim to demonstrate that efficacy of BoNT-A on spasticity-related pain can improve QoL and patient satisfaction whit treatment, independently from spasticity improvement.

Methods

We evaluated 15 patients (66,7% female) suffering from focal spasticity and treated with BoNT-A. Spasticity, pain, disability, quality of life before injection (T0) and after five weeks (T1) were assessed with Modified Ashworth Scale (MAS), Numeric Graphic Rating Scale(NGRS), Disability Assessment Scale (DAS), EQ-5D.
Global Assessment of Benefit (GAB) was administered at T1.

Results

73,3% patients reported spasticity-related pain at initial evaluation at NGRS. (63,64% strong, 27,2% moderate, 9% mild). All scales scores improved significantly after injection. In particular 85,7% of patients with greater NGRS score improvement, and no patients with little NGRS score improvement after treatment, referred significantly higher GAB scores (p=0,015) (**Figure 1**); 100% of patients with greater DAS-pain subscore improvement, and 33,3% of patients with little improvement after treatment, referred significantly higher score at GAB (p=0,045) (**Figure 2**). Moreover, a positive correlation was found between EQ-5D and NGRS improvements (p=0,05). Although a positive relation between MAS improvement and GAB scores seems to exist, it failed to reach statistic significance (p=0,296) (**Figure 3**). Our data, accordingly with literature, show that BoNT-A improve contracture, pain and QoL in adult patients with spasticity. They also suggest that pain improvement may have a direct effect on QoL and on patients' satisfaction with treatment. This relation seems not to be mediated by spasticity improvement.
The small sample size do not allow a better statistical definition. Further studies are needed to confirm these preliminary findings.

Conclusions

Efficacy of BoNT-A on spasticity-related pain may improve patient satisfaction with treatment, and quality of life, independently from spasticity.
Moreover the study can contribute to demonstrate that pain should be considered as an integral part of the management of spasticity and an indication for use of botulinum toxin.

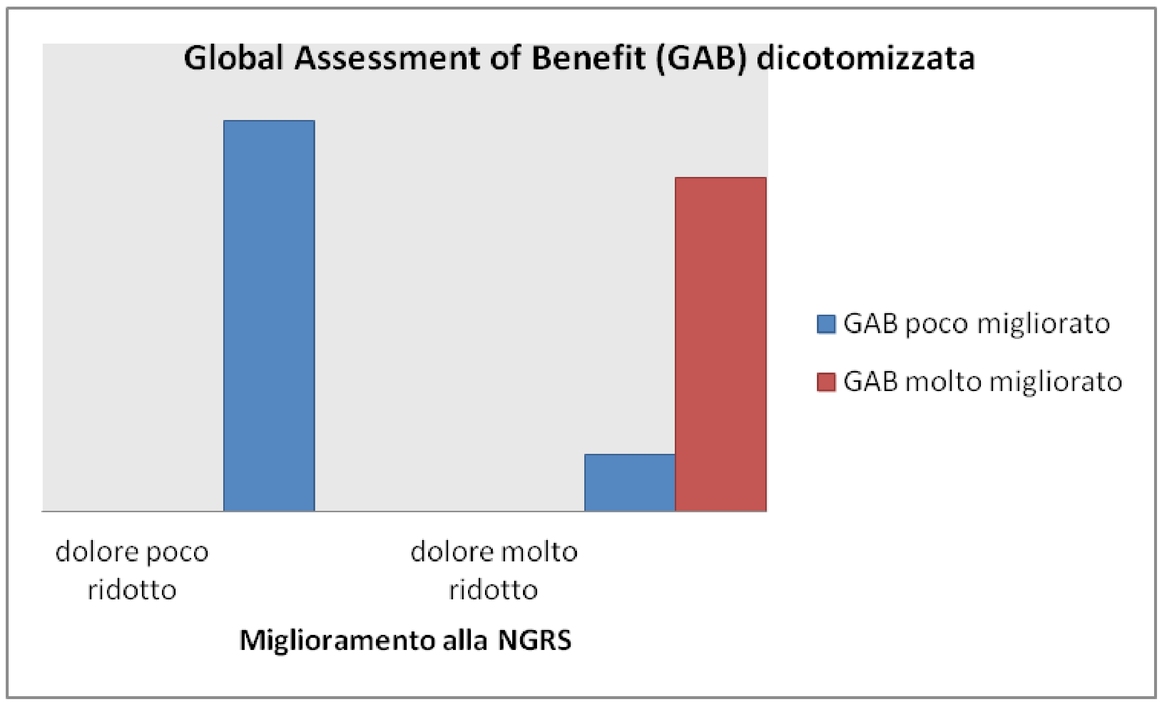

Figure 1

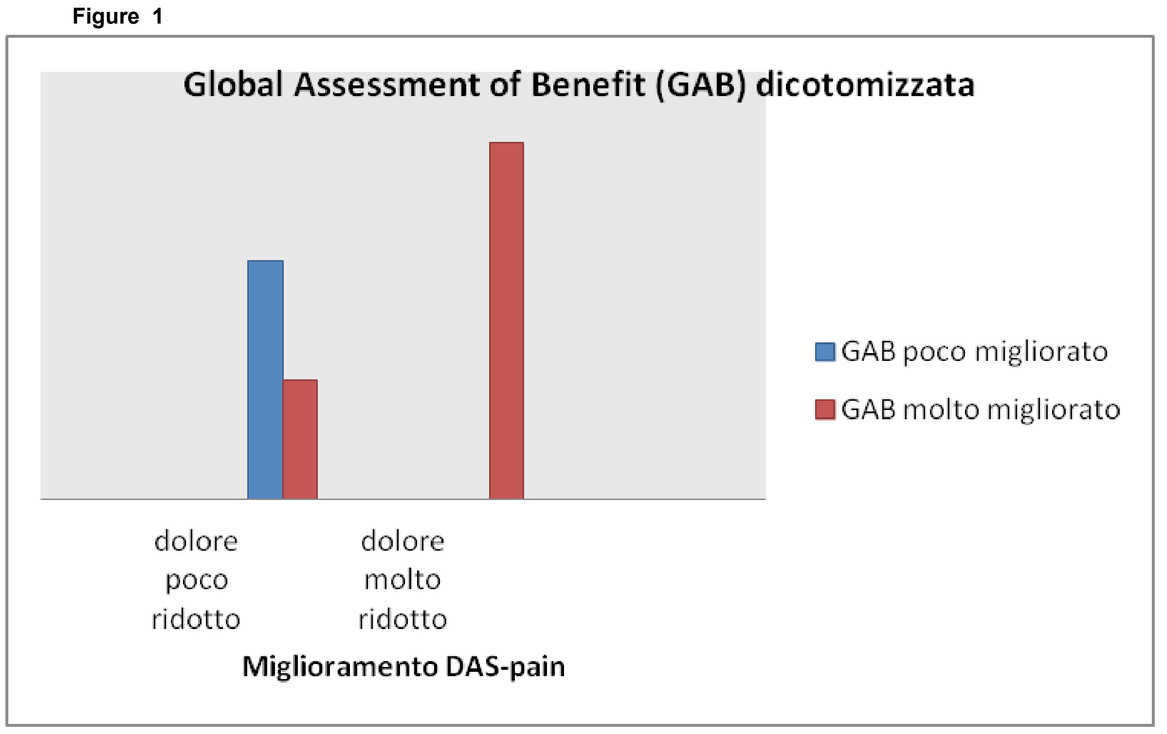

Figure 2

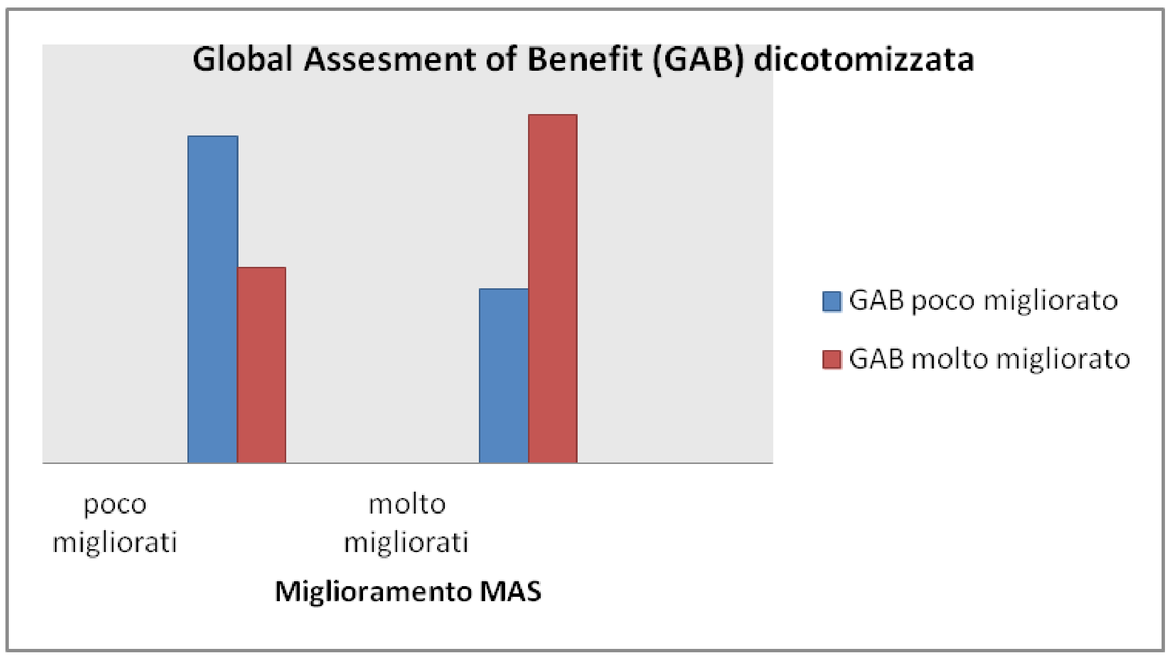

Figure 3

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