Effect of ultramicronized palmitoylethanolamide (um-PEA) treatment in patients suffering from neurogenic dysphagia: a retrospective study

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Introduction

To evaluate efficacy of ultra-micronized palmitoylethanolamide (um-PEA), a lipid signaling molecule possessing well-documented anti-inflammatory and neuroprotective properties (1), on swallowing function disorders associated with several central nervous system (CNS) pathologies.

Materials and methods

All patients were treated with um-PEA concurrently with rehabilitative therapy. The first group of patients (n=29) received sublingual um-PEA microgranules at a dosage of 600 mg twice daily for 4 months length. Patients in the second group (n=13) received oral suspension um-PEA at a dosage of 15 ml twice daily (600 mg/bid um-PEA) for 2 months. Both groups were evaluated by the Dysphagia Outcome and Severity Scale DOS) at baseline (T0) and at treatment end (T1).

Results

Mean age of the first patient group (44±14 years) was lower than that one of the second group (64±15 years). The first group showed, by DOS a significantly more severe degree of dysphagia compared to the second group [3.1±0.7 vs. 5.3±0.6 (p<0.001)].

At treatment end DOS evaluation revealed a significant improvement in deglutitory function in both groups [first group: T0=3.1±0.7; T1=4.3±1.3 (p<0.001); second group: T0= 5.3±0.6; T1= 5.6±0.9 (p<0.05]; improvement was more evident in the first group (p<0.01). Eighty-three percent of patients in the second group also reported mild/moderate improvement on the Patient Global Impression of Changes assessment.

	Basale (T0)	Follow-up (T1)
		25 pazienti/29 MIGLIORATI
1 paz	3 disfagia moderata assistenza totale per la nutrizione e dieta modificata	6 nutrizione indipendente con funzionalità limitata, dieta normale e deglutizione funzionale
2 paz	4 disfagia lieve-moderata, supervisione/indicazioni con minimo contatto, necessità di evitare uno/due tipi di consistenza	6 nutrizione indipendente con funzionalità limitata, dieta normale e deglutizione funzionale
1 paz	2 disfagia moderata – severa, massima assistenza, nutrizione orale solo parziale	5 Disfagia lieve, supervisione a distanza e necessità di restrizioni nella consistenza del cibo
7 paz	3 disfagia moderata assistenza totale per la nutrizione e dieta modificata	5 Disfagia lieve, supervisione a distanza e necessità di restrizioni nella consistenza del cibo
8 paz	4 disfagia lieve-moderata, supervisione / indicazioni con minimo contatto, necessità di evitare uno/due tipi di consistenza	5 Disfagia lieve, supervisione a distanza e necessità di restrizioni nella consistenza del cibo
3 paz	3 disfagia moderata assistenza totale per la nutrizione e dieta modificata	4 disfagia lieve-moderata, supervisione / indicazioni con minimo contatto, necessità di evitare uno/due tipi di consistenza
3 paz	2 disfagia moderata – severa, massima assistenza, nutrizione orale solo parziale	3 disfagia moderata assistenza totale per la nutrizione e dieta modificata
		2 pazienti/29 INVARIATI
2 paz	2 disfagia moderata – severa, massima assistenza, nutrizione orale solo parziale	2 disfagia moderata – severa, massima assistenza, nutrizione orale solo parziale
		2 pazienti/29 PEGGIORATI
1 paz	3 disfagia moderata assistenza totale per la nutrizione e dieta modificata	2 disfagia moderata – severa, massima assistenza, nutrizione orale solo parziale
1 paz	3 disfagia moderata assistenza totale per la nutrizione e dieta modificata	1 disfagia severa, nutrizione orale impossibile

Tab.1 Variations in time of the marks awarded by Scala DOSS, to patients treated with Palmitoylethanolamide ultra-micronized

	T0 Basale	T1 Follow-up	t-test
Scala DOSS (media±DS)	3,14 ± 0,74	4,34 ± 1,32	P<0,0001
n° Pazienti	**29**	**29**	

Tab.2 Evaluation of Dysphagia by Dysphagia Outcome and Severity Scale

Discussion and coclusion

The observed improvement of the severe and mild deglutitory symptoms in patients suffering from neurogenic dysphagia and treated with um-PEA suggests a mitigation in the worsening of their clinical picture. This effect might be attributed to um-PEA ability to modulate neuroinflammatory processes sustained by over-activation of CNS non-neuronal cells such as microglia and mast cells.

These immune cells release pro-inflammatory mediators which alter brain homeostasis and promote selective neuronal cell degeneration in a number of CNS diseases (stroke, Parkinson, multiple sclerosis) (2-4). um-PEA, by reducing neuroinflammation, protects neurons and their functions.

These observations suggest that um-PEA, perhaps due to its anti-inflammatory and neuroprotective properties, could represent a possible add-on treatment to rehabilitative therapy in swallowing disorders associated with CNS disorders.

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