AMINO ACID FORMULA(AF) SUPPLEMENTATION WITH ARACHIDONIC ACID(AA) AND DOCOSAHEXANOIC ACID(DHA) LEADS TO RESOLUTION OF SEVERE SLEEP DISORDERS(SL. D) AND GROWTH GAIN IN A POLYALLERGIC CHILD

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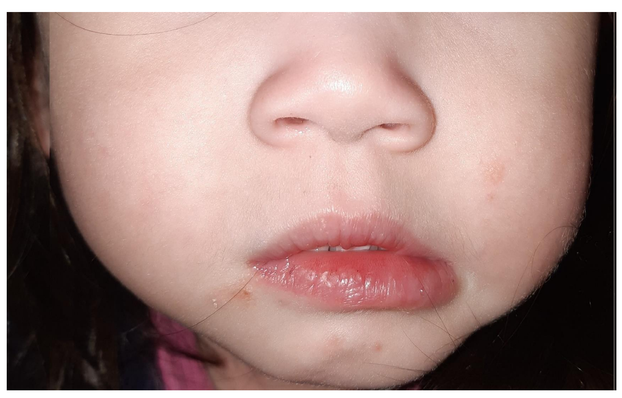
Background:

Severe sleep disorders. in allergic children, are not well-defined and often misdiagnosed. Narcolepsy has been correlated to allergy, but the origin remains unknown. We present a poly-allergic girl who has been nourished mainly with amino-acid formula (AAF) since infancy. After the age of 12 months, she drops gradually to the -3rdSD. She sleeps with her neck hyperextended. ENT examination: normal, no obstruction in the upper airways. At 3 years of age: use of anti-constipation drugs induces nightmares, hyperactivity and aggressive behaviour. The severe sleep disorders coincide with the emergence of respiratory and food allergies. 4 months later: She presents multiple, recurring episodes of partial sudden loss of muscle tonus of the face and an increasing hair growth on the legs.

Methods: *

We effectuated Polysomnography (PSG) and Respiratory Polygraphy (PG) at home, Endocrinologic control, genetic control. Due to growth stagnation and severe allergies, the child was set on AAF 0–12 months supplemented with AA and DHA at 3,5 years of age. Due to the persistence of daily repercussion signs, the child is set on CPAP.



Results:

Micro-arousals (M.AR):36/h. **Respiratory effort** (RE): 22.4%. After the initiation of AAF 0–12 months **supplemented with AA and DHA,** the child progressively recovered his weight and height. All allergic comorbidities substantially subsided. The hairiness disappeared. She stops suffering episodes of partial sudden loss of muscle tonus of the face. Endocrinologic control effectuated after the AA/DHA supplementation: growth hormone, IGF, cortisol, genetic control for endocrinology disorders: normal. Genetic advice was negative for Ehlers Danlos syndrome. However, at food reintroductions, the severe sleep disorders. reappeared and cortisol levels in the morning were increased. CPAP leads to cease of daily repercussion signs. CPAP helped her to tolerate better the sleep disorders related to the food reintroductions. Decongestant drops containing benzalkonium chloride were used to treat her rhinitis but induced mild recurrent nasal bleeding. Patch tests were strongly positive for benzalkonium chloride. The use of decongestant drops containing benzalkonium chloride were discontinued.

Conclusions:

AAF for children >12 months does not contain AA /DHA. DHA has an anti-inflammatory role and could have a regulatory role in inflammatory genes. Cortisol restricts AA production. Allergic inflammation is related to stress pathways and cortisol production. There is evidence that glucocorticoids can suppress GnRH-induced secretion of LH by reducing the amount of AA available for the exocytotic response of GnRH. Non-supplementation of AAF with AA for allergic children could be related to stagnation of growth due to AA insufficiency related to inhibition of AA production due to cortisol increased levels.

References

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Acknowledgments

To the patients and their parents

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