



(SHORT COMMUNICATION)



Has the time come to consider Omega-3 to be part of treatment protocol for atopy and neurodevelopmental disorder?

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GSC Advanced Research and Reviews, 2021, 09(03), 010–012

Publication history: Received on 02 October 2021; revised on 30 November 2021; accepted on 02 December 2021

Article DOI: <https://doi.org/10.30574/gscarr.2021.9.3.0289>

Abstract

Omega-3 fatty acid benefits health throughout life. It is especially important for children's health. It improves symptoms of children with autism and other neurodevelopmental disorders by improving communication and language development and improving behaviour and cognitive function. It also helps in controlling asthma and other atopic conditions. Adding omega-3 to routine management plan for children with asthma, allergic rhinitis, and neurodevelopment worth consideration.

Keywords: Omega-3; Essential fatty acid; Autism; Neurodevelopmental; Atopy

1. Introduction

Omega-3 is an essential fatty acid important for normal brain development and function during childhood [1, 2]. It also has an anti-inflammatory function that helps in reducing the progress of adverse effect of some chronic inflammatory conditions such as asthma, allergic rhinitis, and cardiovascular diseases [3,4]. Some studies showed that omega-3 is vital for normal foetal brain development and has adjunctive therapy role in neurodevelopmental disorders [5,6,7]. Routine omega-3 supplementation for pregnant ladies is a practice in some countries for its vital role in foetal development and subsequent children neurodevelopment and allergy prevention [7,8]. It is also found to be beneficial in reducing progress of neurodegeneration in some condition such as Parkinson's disease [9]. So, the benefit of omega-3 is throughout the whole life.

Dietary source of omega-3 might not be sufficient for conditions where omega-3 plays an important role in controlling the symptoms and the disease progress. The bioavailability of this important essential fatty acid is not always adequate because of poor absorption [10,11, 12]. Hence, supplementation regardless of dietary intake is important in such cases for potential benefit and relatively no harm. I will share my personal experience with Omega-3 supplementation for my patients in the following paragraph.

I work as a community paediatrician at Diwan polyclinic in Muscat, Oman. Oman is situated on the south-east of the Arabian Peninsula with a coastal area of over 1700 kilometre long. Muscat is a coastal city where fish and sea food is a common dish. Health care is free in Oman including medication. In the institute where I work, all children are seen in the paediatrics clinic whether as walk-in acute cases or as booked cases for specialised paediatrics consultation. This offered me the opportunity to see a verity of cases at a relatively early stage, depending on the time of presentation to the medical care. Many of the cases I see are with neurodevelopment disorders, asthma, and allergic rhinitis. Over 200 children attending my clinic (40 with autism and other neurodevelopment disorders, 10 with underachievement at school because of poor memory and poor learning ability and 150 with asthma and allergic rhinitis) were offered omega-3 supplementation regardless of their dietary intake from June 2018 till January 2020. The dose was 480 mg (for

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children aged between 6 months and 5 years) and 900mg (for children aged 6 years to 18 years). The adherence to the supplementation varied between six months and one year). All cases showed significant improvement in their health condition. Children with autism and neurodevelopmental disorders showed improvement in their language attainment and communication, socialisation, interaction with the surroundings, attention, improvement in their cognitive function, and reduction in their aggressive behaviour. The asthma cases showed good control in their symptoms and reduced incidence of acute respiratory tract infection. The benefit of the omega-3 was noticed within 4 weeks of starting to take the supplementation. One child aged one year with reactive air-way disease, chronic rhinitis, squint and poor visual acuity since birth who used to frequently visit emergency department (2-3 time a month) because of severe bronchospasm and tachypnoea despite being on inhaled fluticasone propionate, inhaled salbutamol, and systemic antihistamine. This child also has poor vision and wears glasses. After one month of taking the omega-3 supplementation his asthmatic symptoms got better and he did not go to the emergency department. After four months of using omega-3 his visual acuity and squint improved and the refraction errors measurement continued to improve with time.

All the previously mentioned cases were on standardised intervention prior to starting omega-3 supplementation as an adjunctive therapy for a period varied between 3 months and two years. The neurodevelopmental disorders were attached to specialised rehabilitation centres and the atopy cases were on appropriate medications accordingly, but the outcome improved significantly after the introduction of omega-3 supplementation.

Based on this observation, having omega-3 supplementation as part of the management regime for children with neurodevelopmental disorders and atopy cases need to be considered. Having omega-3 supplementation in the medication list of paediatrics clinic worth revision.

2. Conclusion

Omega-3 is an essential fatty acid that is essential for health. The time has come to consider Omega-3 as part of routine treatment regime for children with atopy and children with neurodevelopmental disorder including autism. Sharing my clinical experience with Omega-3 in treating children with different neurodevelopmental disorder and atopy might help in resolving the controversy regarding Omega-3 benefit.

Compliance with ethical standards

Acknowledgments

I would like to thank the Directorate General of Medical Services at Diwan of Royal Court, Oman for their support.

Disclosure of conflict of interest

The author declares there is no conflict of interest.

Statement of ethical approval

This manuscript complies with the ethical standards and there is no study on human subjects.

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