

AN OPEN LABELLED RANDOMIZED CONTROL TRIAL TO ASSESS THE EFFECT OF AN AYURVEDA GUT THERAPY PROTOCOL FOR MANAGING DYSBIOSIS IN CHILDREN WITH AUTISM SPECTRUM DISORDERS

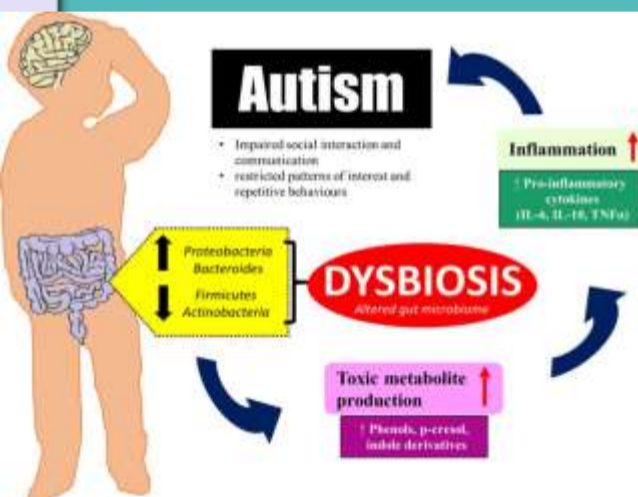
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INTRODUCTION

Autism Spectrum Disorder (ASD), neuro-behavioural disorder appears to be a global concern with incremental surge in its prevalence of about 1 in 160 according to estimates from the World Health Organisation¹. Exponential increase in the prevalence since 2004 is reported by Centre for Disease Control (CDC) also with projected for 2020 as 1 in 54². Characterised by remarkable impairment in social interaction and communication, ASD creates much turbulence in the family which needs to be addressed dextrously. Victim of virulent debates on etogenesis and without reliable biomarkers treatment of ASD still continues as a matter of speculation³. Accumulating evidence on invariable connectivity between traits of autism and dysbiosis under the rubric of “gut-brain axis” still continues⁴. Springing up of probiotic industry in ASD management affirms on to this bidirectional relation⁵.



OBJECTIVES

To assess the efficacy of an Ayurveda gut therapy protocol in the management of autism features and the dysbiotic changes of gut microbiome in children who are suffering from ASD. Hence paving the way for a holistic, non-linear, dynamic and comprehensive model for the management of ASD.

METHODOLOGY



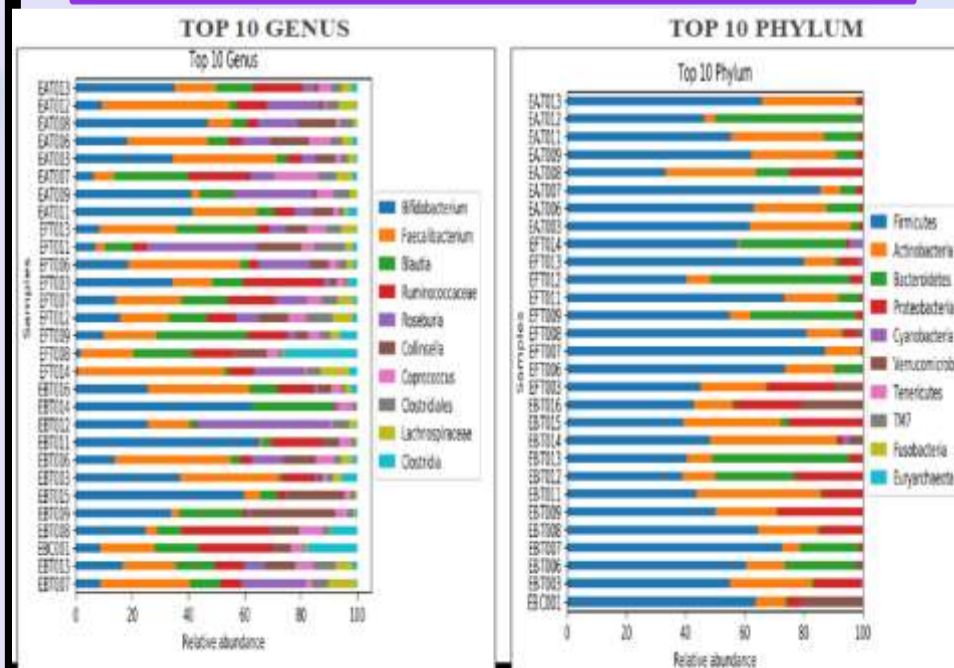
RESULTS

Summary statistics for the different measures under CARs

Treatment	Time	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Control	1	45.91	0.635	44.642	47.186
	2	44.53	0.559	43.413	45.656
	3	43.79	0.578	42.635	44.951
Intervention	1	46.39	0.646	45.098	47.688
	2	42.55	0.569	41.413	43.694
	3	40.62	0.588	39.446	41.804

In autism features assessed through CARs significant decrease was obtained in the means score of the intervention group (MD= 5.7679, SE=0.38359) when compared to the control group (MD=2.1207, SE=0.31058) with P<0.05.

MICROBIOME RESULTS OF 16SrRNA SEQUENCING OF STOOL SAMPLES



From the results of 16 S r RNA sequencing it was evident that the tested protocol was highly effective with statistical significance in improving good bacterial colonies and reducing harmful bacterial colonies so as to maintain a healthy bacterial equilibrium resulting in the proper management of dysbiosis in children with autism spectrum disorders.

DISCUSSION

Human body with its physiology being a bunch of probabilities, still ascribe as an impediment in the study of origin and causation of disease with its imperfections and incompleteness⁶. Being multi-factorial in origin, duration and progression, conceptual changes over the disease causing theories had shown a paradigm shift over the decades advancing from the germ theory, stress related theory, free radical theory and to the latest concepts of dysbiosis theory of which autism spectrum disorders be no exception. According to Ayurveda, gut health is the epicentre of critical importance playing a pivotal role in the origin, duration, progression and management of all morbidities⁷ and hence the so called biomedical understanding related to gut, dysbiosis is the most important. Dysbiosis being a multi pronged concept, how the multi factorial perspective of Ayurveda be effective in the management is being assessed here. Mere supplementation of beneficial bacteria through probiotics for management however be only a tip of iceberg. A holistic, non-linear Ayurveda approach encompassing lifestyle, diet guidelines and polyherbal compounds is being utilised here and was well effectively reflected in the results.

CONCLUSION

Non-linear, multi-model Ayurveda management was found highly effective in managing dysbiosis and therein by the ASD features with prime influence on most commonly discussed species of Bifidobacterium.

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