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EDITORIAL COMMENTARY

Early Onset Non-Syndromic Obesity- Is Next Generation Sequencing the Next in Agenda?

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Childhood obesity is emerging as a major public health problem with doubling of prevalence over the last couple of decades [1]. While lifestyle factors are the main cause, genetic etiology remains an important consideration in early onset non-syndromic obesity. Clinical practice guidelines suggest genetic testing for children below the age of five years with non-syndromic severe obesity [2]. The diagnosis of these disorders had been challenging due to lack of clinical pointers and access to genetic testing.

In this issue of the journal, Khadilkar et al., report their experience of Next generation genetic testing for two important obesity related genes, Leptin and MC4 receptor in 46 children with early onset non-syndromic obesity [3]. They identified pathological mutations in 4 (8.5%; Leptin deficiency in 3 and MC4 Receptor defects in 1) and emphasized the importance of genetic studies in these children for prognosis, treatment and genetic counseling.

The study reaffirms the importance of genetic testing in determining etiology of early onset non-syndromic obesity. Universal screening of children below the age of five years with severe non-syndromic obesity for genetic etiology however poses a substantial resource burden. Moreover, it is expected to unearth etiology in only 8.5% for which effective treatment is either not available or accessible. Inclusion of greater number of target genes would have increased the diagnostic yield of the study, however, at a substantially greater cost. This suggests the need for selective evaluation of subjects with high pretest probability of genetic obesity. Findings of this study suggest that age at presentation is an important predictor of genetic etiology in these children. All subjects with genetic obesity in this study were younger than 2.5 y. This along with 9.5 times odds of children below the age of two years having genetic etiology than older subjects, indicate the need for lowering age threshold for genetic evaluation.

In conclusion, the study reiterates the importance of genetic testing in children with non-syndromic early onset obesity. There is a need for larger studies with inclusion of greater number of obesity genes to determine the contribution of genetic causes in non-syndromic early onset obesity in Indian children and devising protocols for targeted evaluation.

Compliance with Ethical Standards

Conflict of Interest None.

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