

POSTER PRESENTATION

Open Access

# Evaluation of MC4R [RS17782313, RS17700633], AGRP [RS3412352] and POMC [RS1042571] polymorphisms with obesity in Northern India

Apurva Srivastava<sup>1\*</sup>, Balraj Mittal<sup>3</sup>, Jai Prakash<sup>2</sup>, Neena Srivastava<sup>1</sup>

From International Conference on Human Genetics and 39th Annual Meeting of the Indian Society of Human Genetics (ISHG)  
Ahmadabad, India. 23-25 January 2013

## Background

Genetic variants of the melanocortin-4 receptor gene (MC4R), agouti related protein (AGRP) and proopiomelanocortin (POMC) are reported to be associated with obesity. Therefore, we examined MC4R rs17782313, MC4R rs17700633, AGRP rs3412352 and POMC rs1042571 for association with obesity in North Indian individuals.

## Material and methods

The variants were investigated for association in 300 individuals with BMI $\geq$ 30kg/m<sup>2</sup> and 300 healthy non-obese individuals with BMI $<$ 30kg/m<sup>2</sup>. The genotyping were analyzed by Taqman probes. The statistical analysis was performed by means of the software SPSS, ver.19 and P $\leq$  0.05 was considered statistically significant.

## Results

The genotypes of MC4R rs17782313 and POMC rs1042571 were significantly associated with obesity (BMI $\geq$ 30kg/m<sup>2</sup>) (p=0.02; OR=1.7 and p=0.01; OR=1.6 respectively). However, MC4R rs17700633 (p=0.001; OR=0.55) was associated with low risk. AGRP rs3412352 (p=0.93; OR= 0.96) showed no association with obesity (BMI $\geq$ 30kg/m<sup>2</sup>) in North Indian individuals.

## Conclusions

The study provides the first report of association of MC4R rs17782313 and POMC rs1042571 that these may have an effect on obesity BMI $\geq$ 30kg/m<sup>2</sup> but MC4R rs17700633

and AGRP rs34123523 may not have any influence on obesity BMI $\geq$ 30kg/m<sup>2</sup> in North Indian individuals.

## Authors' details

<sup>1</sup>Department of Physiology, King George's Medical University, Lucknow, (U.P), India. <sup>2</sup>Department of Pediatrics, King George's Medical University, Lucknow, (U.P), India. <sup>3</sup>Department of Medical Genetics, SGPGIMS, Lucknow, (U.P), India.

Published: 21 January 2014

doi:10.1186/1755-8166-7-S1-P104

**Cite this article as:** Srivastava et al.: Evaluation of MC4R [RS17782313, RS17700633], AGRP [RS3412352] and POMC [RS1042571] polymorphisms with obesity in Northern India. *Molecular Cytogenetics* 2014 7(Suppl 1):P104.

Submit your next manuscript to BioMed Central and take full advantage of:

- Convenient online submission
- Thorough peer review
- No space constraints or color figure charges
- Immediate publication on acceptance
- Inclusion in PubMed, CAS, Scopus and Google Scholar
- Research which is freely available for redistribution

Submit your manuscript at  
www.biomedcentral.com/submit



\* Correspondence: drneenasrivastava@hotmail.com

<sup>1</sup>Department of Physiology, King George's Medical University, Lucknow, (U.P), India

Full list of author information is available at the end of the article