



POSTER PRESENTATIONS

GROWTH HORMONE / GROWTH

PP-GH-01

THE ROLE OF GROWTH HORMONE IN MAINTAINING PANCREATIC ISLET MORPHOLOGY

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OBJECTIVES

Endoplasmic reticulum stress (ER stress) is one of the causes of decreased insulin secretion with aging. Since growth hormone (GH) secretion decreases with age, we hypothesized that decreased GH was related to ER stress. We investigated islet structure in GH-deficient spontaneous dwarf rat (SDR), and GH effects in BRIN-BD11 cells derived from rat pancreatic β -cells.

METHODOLOGY

Overnight fasted 6- and 12-month-old male SDR and normal Sprague Dawley rats were used for collection of blood and pancreas samples. The mRNA expression of X-Box binding protein-1 (xbp-1), which is implicated in ER stress, was measured in BRIN-BD11 cells with or without GH treatment.

RESULTS

Serum concentration of glucose and proinsulin were higher in 12-month-old SDR than in age-matched normal rats. Islet structures of normal rats were oval, but the structures of 40% of islets were disrupted in 12 month-old SDR. The mRNA level of XBP-1 spliced form in the pancreas was increased with aging in normal rats, but not in SDR. Most XBP-1 antibody positive cells were in islets, and the positive cell number in islets was lower in 12 month-old SDR than in age matched normal rats. GH treatment increased mRNA levels of XBP-1s in BRIN-BD11 cells.

CONCLUSION

XBP-1 is known as the key factor in the unfolded protein response (UPR) following ER stress, and the UPR has been implicated in insulin secretion and β -cell survival. Our data suggested that GH might have a role in maintaining islet structure by increasing XBP-1 expression in β -cells.

PP-GH-02

ESTABLISHMENT OF GROWTH VELOCITY CHARTS FOR ASIAN INDIAN CHILDREN

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OBJECTIVES

Height velocity is a crucial anthropometric parameter for the evaluation of mild or recent onset short stature. The WHO recommends updating the growth references every decade. There is no data on height velocity among South Indian children. We therefore undertook this study to establish the normative data.

METHODOLOGY

This prospective longitudinal study included 3,327 apparently healthy children aged 3 to 18 years from government and private schools of Krishna district, Andhra Pradesh. Height and weight were measured at baseline and at three monthly intervals for one year (October 2018 to October 2019).

