

Endocrinologists have a role in moderating adverse metabolic consequences of early over feeding of children born SGA

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Background:

- ❖ Intra uterine growth retardation (IUGR) results in infants born small for gestational age(SGA)
- ❖ 10% of IUGR infants fail to catch up

Causes of IUGR/SGA

Maternal

PET, placental insufficiency

Foetal

11p15 methylation changes at H 19 locus

UPD 7

Increased lifetime risks for health problems

Especially in the group who remain small include metabolic syndrome with :

- Obesity
- Insulin resistance
- Abnormal glucose metabolism
- Hypertension
- Dyslipidaemia
- Type 2 diabetes mellitus

Rapid weight gain in IUGR infants is associated with precursors of metabolic syndrome:

- ↑triglyceride & ↓insulin sensitivity by age 1
- Insulin resistance by the second year of life
- Increased incidence of later obesity
- premature adrenarche
- PCOS

Tertiary hospital practice

- In hospital settings, early care of SGA/IUGR infants is usually provided by neonatologists and general paediatricians
- Early gastro enterologic referral for apparent failure to thrive is common
- Use of percutaneous gastrostomy is utilized, aiming to improve weight gain
- Endocrinology referral is usually later, for poor linear growth and consideration for growth hormone

Hypothesis:

Over feeding of IUGR infants and young children increases linear growth at the expense of signs of early metabolic syndrome.

Objective

To provide evidence of adverse metabolic consequences of early over feeding of IUGR children

Method:

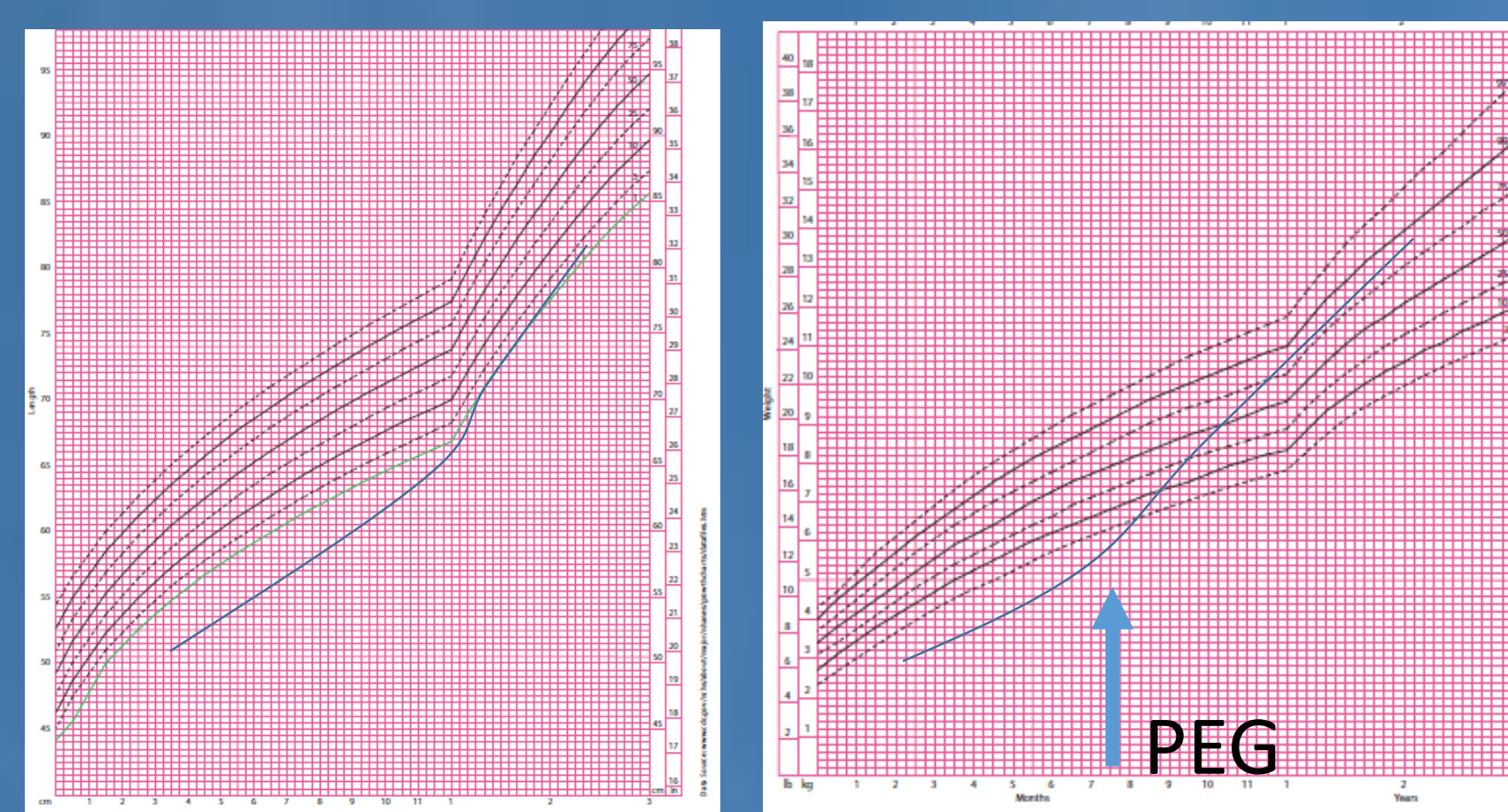
Observation of growth parameters, weight distribution and metabolic parameters of 4 PEG fed children, aged 2-4 years with a history of IUGR, referred to an endocrine service for slow linear growth



IUGR aged 4



IUGR aged 10



Results:

- Severe central adiposity, buffalo hump and accelerated weight gain far exceeding increase in linear growth
- Glucose, insulin, lipids, liver function remained in normal ranges

Conclusions:

- ❖ Extreme caution should be undertaken before PEG feeding of IUGR infants and young children is considered.
- ❖ Careful monitoring is required to prevent onset of features of early metabolic syndrome.
- ❖ Ongoing surveillance is essential as children with rapid weight gain are those at greatest future and long heart disease and stroke.
- ❖ **It is a responsibility of endocrinologists to adequately inform their colleagues of cautions and special needs of IUGR children**

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