

# Antepartum Pituitary Insufficiency in Type 1 Diabetes

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## Introduction

Antepartum pituitary insufficiency (API) is reported only in a few women with type 1 diabetes (T1D). API has an abrupt onset and may have fatal outcome.

## Case report

A 36 year old woman with T1D from 4 years of age and laser-treated retinopathy became pregnant after repeated in vitro fertilization. In gestational week (GW) 10, she used 34-42 U of insulin per day. HbA1c was 6.2% and s-cortisol (08 am) 664 nmol/l.

In **GW 34** she was hospitalized with intense headache and vomiting. On admission, neurological examination and cerebral MRI were normal. There was no sign of preeclampsia.

**Table 1. Biochemical findings on admission.**

Parameter	Value	Reference
Glucose	2,6	Ref.4,2-6,3 mmol/l
Cortisol (8am)	144	Ref.142-651 nmol/l
ACTH	<1,1	Ref.1,1-10,2 pmol/l
Growth Hormone	1,5	mU/l
IGF-1	5,9	Ref.14-40 nmol/l
Prolactin	285	Ref.102-496 mU/l (non-pregnant)

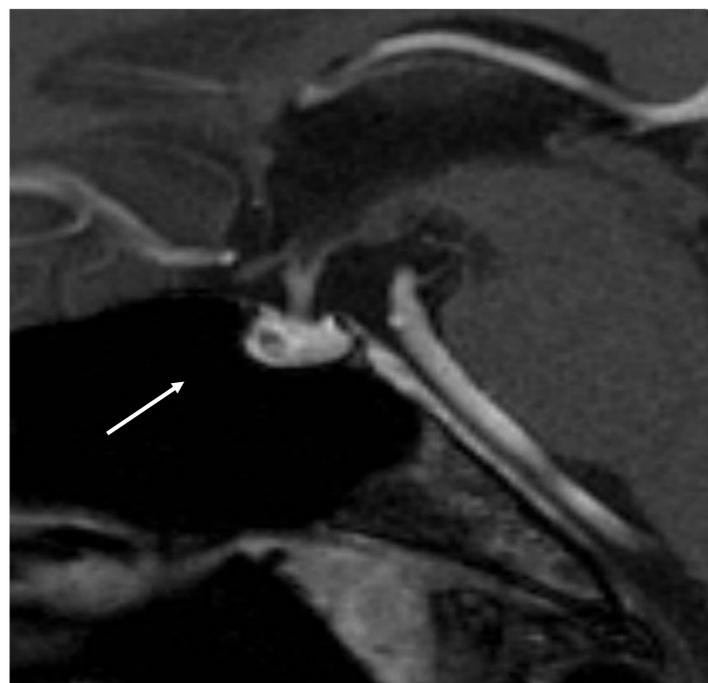
Insulin doses were reduced. She was given i.v. glucose and hydrocortisone. Emergency Caesarean section was performed due to fetal distress (healthy girl, birth weight 2610 g, Apgar score 9 at 1min). The mother had no hypotension. She was unable to breastfeed. Despite substantial reduction in insulin dose and low-dose cortison replacement, she had frequent hypoglycaemias without warning.

Postpartum (PP) pituitary MRI was normal. MRI 3 months PP revealed reduced contrast uptake in the pituitary consistent with necrosis (Fig 1).

Insulin tolerance test (ITT) 2 months PP, and repeated 2 years PP, showed subnormal cortisol/GH responses (Table 2). GH replacement improved the woman's hypoglycaemia awareness and general well-being.

**Table 2. Postpartum (PP) insulin tolerance test (ITT)**

Parameter	3 months PP	2 years PP
Nadir Glucose	0,8 mmol/L	1,2 mmol/l
Peak Cortisol	436 nmol/l	468 nmol/l
Peak Growth Hormone	11.8 mU/l	4,5 mU/l
IGF-1	5,8 nmol/l	4,2 nmol/l
Peak ACTH	2,8 pmol/l	3,4 pmol/l



**Figure 1. MRI of pituitary 3 months PP.** Reduced contrast uptake in pituitary, consistent with sequelae after pituitary infarction or necrosis.

## Discussion:

**The hypertrophied pituitary of late pregnancy may be vulnerable to infarction and necrosis.**

**We speculate whether repeated ovarian stimulation together with microvascular diabetic complications and autoimmunity may have increased the vulnerability to pituitary infarction and necrosis in this woman with API.**