Hypopituitarism in an Infant with Hyperbilirubinemia

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Patient Demographics
10-week old Caucasian female

Clinical Presentation
HM presented to the hospital with hypoglycemia, poor feeding, poor weight gain, and a 1-week history of vomiting, diarrhea, and jaundice.

Past History
• Product of in vitro fertilization with anonymous egg donor and father’s sperm
• 37-week gestation
• Emergency caesarean section for maternal pre-eclampsia
• Maternal history of Graves disease
• Birth weight 2550 gm (5 lb. 10 oz.)

Evaluation

Auxology
• Weight 3.4 kg (<3%)
• Length 56.0 cm (3%)

Laboratory testing
• Glucose 31 (74-106 mg/dL)
• Ammonia 154 (9-30 umol/L)
• Alkaline phosphatase 429 (129-280 unit/L)
• AST 86 (9-80 unit/L)
• GGT 124 (17-126 unit/L)
• Albumin 3.9 (3.5-5.0 gm/dL)
• Total bilirubin 7.1 (0.2-1.3 mg/dL)
• Direct bilirubin 4.5 (0.0-0.6 mg/dL)
• Cortisol <1.0 (0.9-19.4 ug/dL)

Thyroid testing
• T4 5.2 (6.1-13.7 ug/dL)
• Free T4 0.8 (1.0-1.8 ng/dL)
• TSH 1.57 (1.7-9.1 uIU/mL)

Critical sample during hypoglycemia (50 mg/dL)
• Growth hormone 4.3 (>10 ng/mL)
• Cortisol 1.1 (0.9-19.4 ug/dL [range for random sample])
• Insulin 1.57 (6-26 uU/mL [range for random sample])

Liver biopsy
• No evidence of biliary atresia

Pituitary MRI
• Ectopic posterior pituitary gland
• Small anterior pituitary gland
• Absent pituitary stalk

Ophthalmology evaluation
• Minimal bilateral optic nerve hypoplasia

Thyroid testing

References

Interventions
Hormone replacement therapy

• Hydrocortisone 2.5 mg TID (25 mg/m²/day)
• Levothyroxine 25 mcg daily
• Growth hormone 0.1 mg daily (0.3 mg/kg/week)

Discussion
Low growth hormone and cortisol levels, hypoglycemia in an infant, and abnormal MRI support the diagnosis of hypopituitarism. Hyperbilirubinemia associated with hypopituitarism in an infant is uncommon, although it has been described (1, 2). Hypopituitarism can result in potentially life-threatening complications including severe hypoglycemia, electrolyte imbalance, and shock. Hypopituitarism should be included in the evaluation of infants with jaundice and failure to thrive (3).

Conflict of Interest:
The authors have no financial disclosures to report.