

Congenital Hyperinsulinism in Children with Beckwith-Wiedemann syndrome

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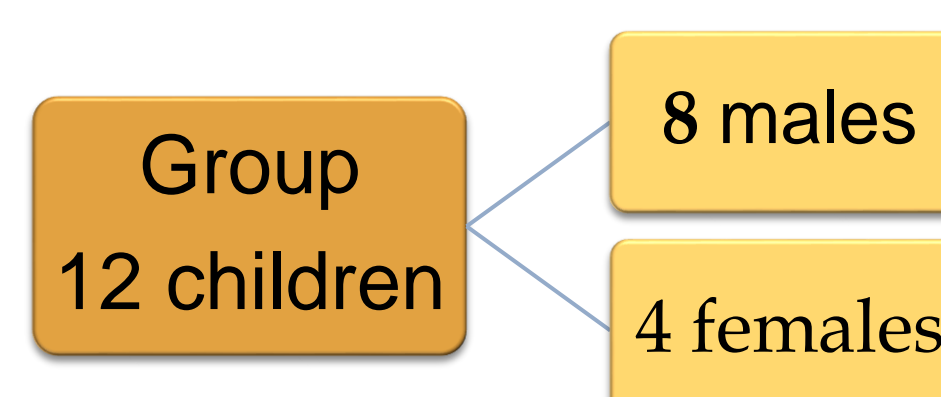
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OBJECTIVES

- Beckwith-Wiedemann syndrome (BWS) is a multisystem imprinting disorder.
- Approximately 50% of patients with BWS develop congenital hyperinsulinism (CHI).
- In this study, we describe the main clinical features in a group of patients with BWS and CHI.

METHODS

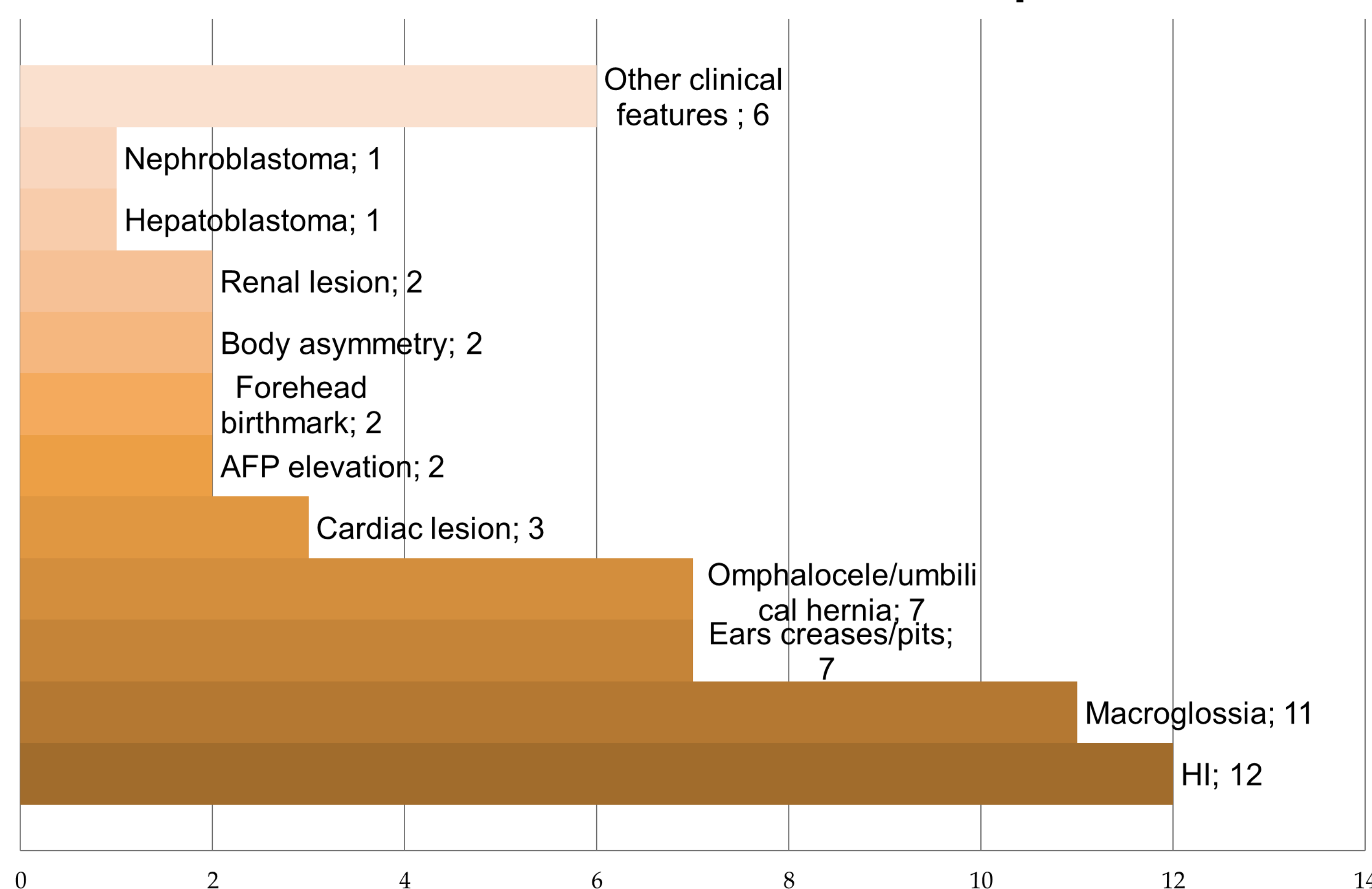
- Clinical and laboratory data were collected from all patients with BWS under the care of endocrine units at Alder Hey Children's Hospital (Liverpool, UK) and Endocrine Research Centre (Moscow, Russia).
- All patients were under the follow up of multidisciplinary team and received required surveillance once every 3 months.



Median age 1 year 5 months
(3 months – 11 years 8 months)

RESULTS

Common clinical features in BWS patients



- Common clinical features of BWS included macroglossia (91%), large birth weight for gestational age (66%), ear crease/pit (58%) and umbilical hernia (58%).
- MS-MLPA was performed in 10/12 children: in 3 patients methylation abnormality of 11p15.5 region was not found, in 6 patients ICR2 hypomethylation was noted and 1 patient had mosaic paternal isodisomy of 11p15.5 region. The latter patient had two histologically proven embryonic tumors (hepatoblastoma and Wilm's tumor) *in the neonatal period*.

- All patients had presented with recurrent hypoglycemic episodes with elevated plasma concentration of insulin during hypoglycaemia confirming CHI.
- Diazoxide was effective in 10/12 patients. The patient with mosaic paternal isodisomy of 11p15.5 region was resistant to diazoxide and treated with octreotide.

Median dose of diazoxide
6.9 mg/kg/day
(3-10)

Median insulin level during hypoglycemia
66 pmol/l
(20.5-251)

Median duration of diazoxide therapy
8 months
(3 months - 11 years 8 months)

CONCLUSIONS

- The majority of BWS patients with CHI were responsive to diazoxide. One patient with mosaic paternal UPD of 11p15 (considered as high risk for tumour) developed Wilm's tumour and hepatoblastoma in the *neonatal period*.
- Genetic analysis would for disease prognosis in patients with BWS.

Conflict of interests

Authors declare no conflict of interest