Long-term treatment with Lanreotide in CHI

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The scall !!

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Action of somatostatine

- Specific somatostatine receptors on beta-cell-surface
- Down-regulation of Chromogranin A (building of secretory vesicles)
- Supressed mRNA expression of insulin-gene

Indications:

- neuroendocrine tumors
- acromegaly
- CHI



Phamacologic preparations:

- somatostatine (very-short-acting)
- octreodtide (long-acting, 6-8 hours)
- lanreotide (very-long-acting (4-6 weeks)

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Lanreotide

- deep subcutaneous injektion
- 60 mg, 90 mg, 120 mg available
- Injection every 28d recommended



Reported use in children:

Constitutional overgrowth (Carel et. al. 2007)

Reported use in CHI:

- 1. Kuehnen, P; Horm. Res 2009 (abstr.).
- 2. Modan-Moses, D, JCEM, 2011
- 3. Kuehnen, P; Horm Res Paediatr, 2012.



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Treatment of Congenital Hyperinsulinism with Lanreotide Acetate (Somatuline Autogel)

Dalit Modan-Moses, Ilana Koren, Kineret Mazor-Aronovitch, Orit Pinhas-Hamiel, and Heddy Landau



JCEM, August 2011

BZ unter kontinuierlicher Octreotid Gabe s.c.

BZ mit monatlicher Lanreotide-Gabe.

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Berlin treatment study

- 6 Patients with CHI (diffuse form) with treatment failure of established medical therapy (daizoxide, nifedipine, octreotide) 1 patient with partial pancreatectomy (50%).
- **Age** of patients: 7 Monate up to $4^{7}/_{12}$ yr. (mean $2^{11}/_{12}$ yr.)
- Dose adjustment: Start with 60 mg (independent from age and weight)
 - if frequent hypoglyxcaemias \rightarrow increase dosage (90, 120 mg)
 - if frequent hyperglycaemia \rightarrow reduce dose down until 60 mg

Study period:

60d before and 31 d after lanreotide dose adjustment period 4-time daily bood-sugar measurements, documentation of hypoglycaemia

Duration of therapy: mean 4 years (3 - 5 yr.)

Results: mean blood-sugar values



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Results: Frequency of hypoglycaemia



→ Reduced risk for hypoglycaemia with Lanreotide (odds ratio 0,38)

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Safety, adverse events, side effects

- Side effects:
 - Induration at injection site (maybe when injected i.m.) slowly resolving.
 - Gallbladder concrements (sludge, stones) developed under octreotide-therapy remained unchanged, no clinical symptoms.
 - No "new" gall concrements
- Safety:
 - No serious adverse events
 - No alteration of longitudinal growth, no effect on other hormonal axis

Lanreotide: Pros and Cons

<u>Pros</u>

- Injection performed by medical person (nurse)
 - Easing the burden of parents
- Blood-sugar values improved compared to former treatment
- Single injection every 4 6 weeks

<u>Cons</u>

- Lanreotide effect is stronger in some patients and minimal in other pt.
- Injection with a large needle for 2 5 min.
- Side effects (gallbladder concrements)

Biggest advantage: Independence...!

- Reduces problem with day care, kindergarten, school
- No need to give medication between injections
- If responsive only measurement of blood sugar and meals has to be organized
 - Staying with family or friends over night
 - Travels with groups or school

It's not sooo bad...



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Conclusion



- Long-term treatment of (diffuse) CHI is feasable
- Reduced hypoglycaemia frequency
- Trend to higher blood-sugar levels observed

so much left to do...





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