

Buserelin in the treatment of Cryptorchidism

Lessons From a Randomized, Double-blind, Placebo-Controlled Trial

Domingos Bica & Faruk Hadziselimovic

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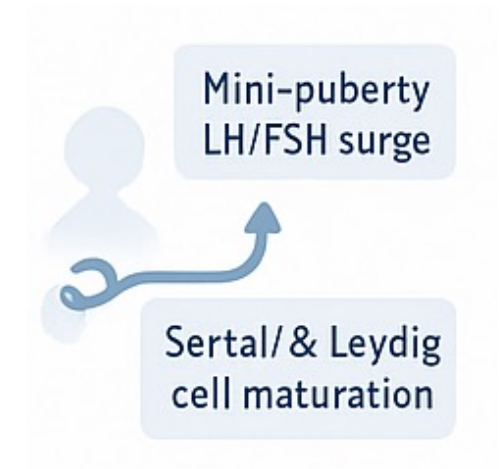


Setting the Stage: Context and Rationale

- **First** randomized, double-blind, placebo-controlled, 3-arm study.
- Evaluate **Buserelin effect** on testicular descent and germ cell maturation.
- Conducted in **Rio–Basel collaboration**.
- Study **remained blinded** until histological analysis was completed.

Mini-Puberty & Germ Cell Maturation

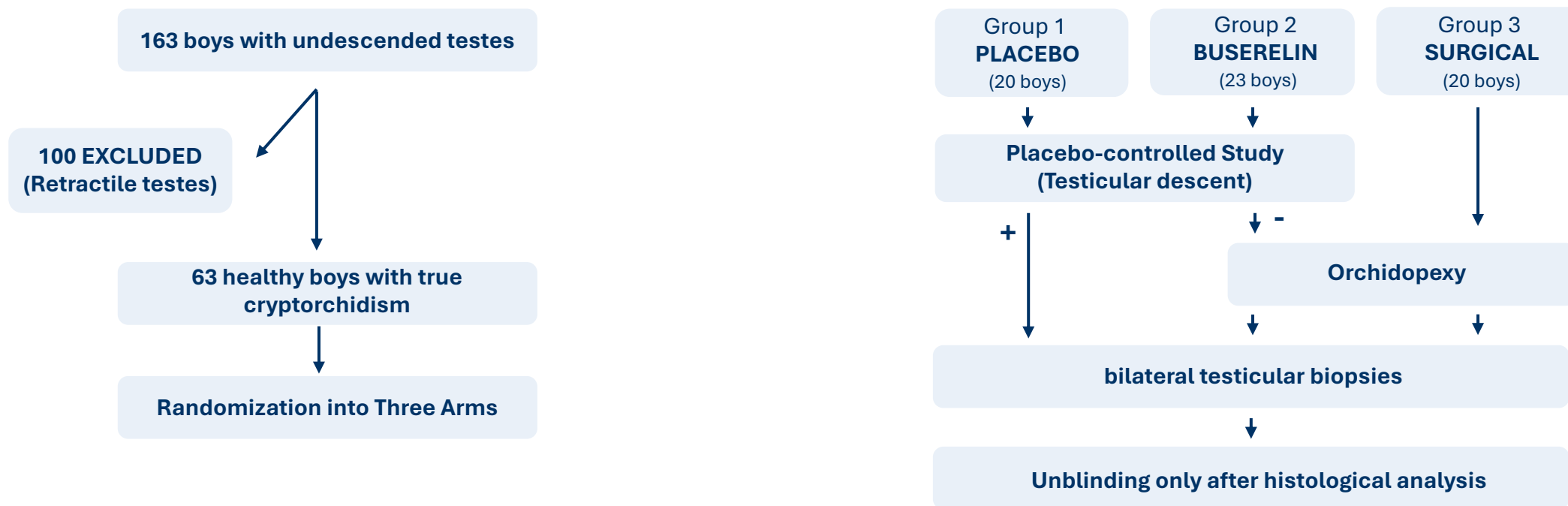
- Mini-puberty occurs between **1–6 months of age** in male infants
- Surge in LH, FSH, testosterone → **key to Ad spermatogonia development**
- Cryptorchid boys **may have impaired** hormonal activation
- Buserelin aims to **mimic** this physiologic hormonal window



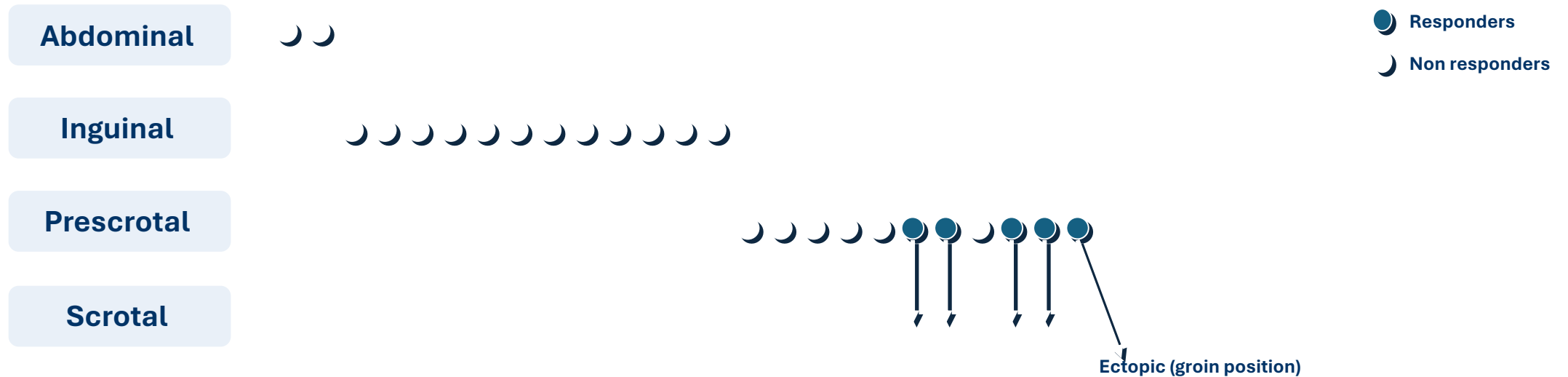
Hormonal Treatment: The Three Arms of the Study

- **Three groups:** 1. Placebo, 2. Intranasal Buserelin and 3. Orquidopexy alone.
- **Buserelin protocol:** 20 µg/day, intranasally, for 28 days.
- Orchidopexy was also performed for testes that remaining **undescended after clinical treatment**.
- **Bilateral testicular biopsies** were obtained from all patients.

Study Workflow

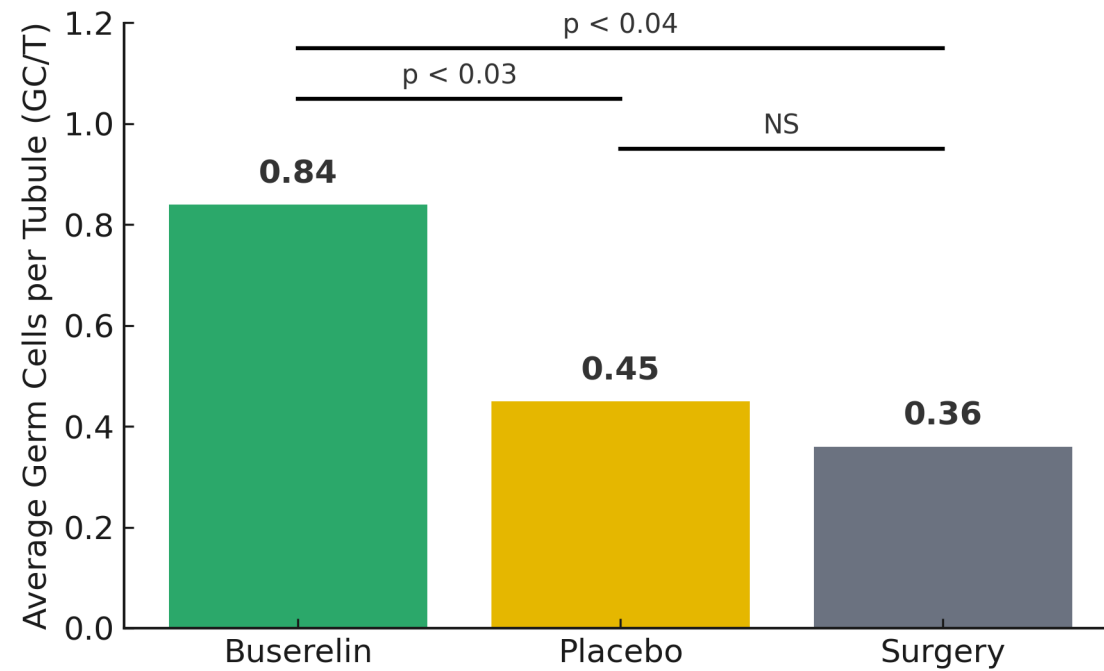


Testicular Descent – Buserelin



“ 25 testes analyzed – 5 full scrotal descents ”

Germ Cell Count per Tubule



Ad Spermatogonia: Key Histological Marker

- Findings confirmed in follow-up work with **Zivkovic, Hadziselimovic and Bica**
- Observed **mainly in Buserelin-treated testes**
- Absent or depleted in **placebo and surgical groups**
- Their presence is essential for **future spermatogenesis** and predicts **better fertility outcomes**

Methodological Strengths

- **Prospective**, randomized, double-blind clinical trial.
- All patients were evaluated, selected, treated and surgically managed **by the same clinician** (Bica).
- **Bilateral testicular biopsies** were obtained from all patients.
- Histology **assessed blindly** by Prof. Faruk Hadziselimovic.
- Design allowed robust and **unbiased comparison** of clinical and histological outcomes.

Lessons Learned

- **Orchiopexy remains the cornerstone**, ideally performed between 6–12 months
- **Testicular biopsy provides prognostic insight** into fertility potential
- **Buserelin may support germ cell maturation** in selected cryptorchid boys
- **Ad spermatogonia emerged as a key marker** for long-term fertility outcomes
- Insights from this **30-year-old trial** remain relevant for future strategies

With gratitude – Muito obrigado

