LHRH STIMULATION TEST – PAEDIATRIC PROTOCOL

INTRODUCTION

This test is used to assess the ability of the anterior pituitary to secrete gonadotrophins (LH and FSH) in response to LHRH stimulation. Indications for use are in differential diagnosis of male hypogonadism, ambiguous genitalia, micropenis or delayed puberty. This test is also useful in the investigation of precocious and delayed puberty in females.

The LHRH test may be combined with a HCG stimulation test on day one (see pro-forma for HCG) to assess testicular response and function.

CONTRAINDICATIONS AND SIDE EFFECTS

None

PATIENT PREPARATION

None; the child does not need to fast.

PRECAUTIONS AND PATIENT CARE DURING TEST

No particular precautions. If HCG test is also required then the LHRH test **must** be completed before HCG is given, since HCG interferes with LH and FSH secretion (please use HCG stimulation protocol and proforma if undertaking combined LHRH and HCG testing).

PROTOCOL

Please use separate pro-forma to record samples taken and timing.

1. Apply Ametop cream to a suitable cannulation site and wait for at least 45 minutes before cannulation.
2. Cannulate the child and wait 30 minutes before taking baseline (time 0) samples.
3. Take baseline (time 0) blood samples into 2 x orange lithium heparin tubes for LH, FSH, Testosterone, SHBG and Oestradiol.
4. Administer the LHRH i.v. 2.5mcg/kg body weight (maximum dose 100mcg).
5. Take second set (time 30 min) of blood samples into 1 x orange lithium heparin tube for LH and FSH.
6. Take final set (time 60 min) of blood samples into 1 x orange lithium heparin tubes for LH, FSH.

INTERPRETATION

A normal response is an increase of the low basal LH and FSH levels at 30 minutes and decrease at 60 minutes. An exaggerated response of LH and FSH to LHRH (when basal gonadotrophins are also usually elevated) indicates primary gonadal failure. Pituitary failure would give a flat response but is not diagnostic. Also hypothalamic abnormalities give a delayed or exaggerated response but are not excluded by a normal response. In central precocious puberty the LH:FSH ratio is usually greater than 1.

REFERENCES

1. Maidstone District General Hospital Protocol
2. Royal London Hospital Protocol
3. Ogilvy-Stuart A and Midgley P. Practical Neonatal Endocrinology, Cambridge Clinical Guides 2006

CONTACTS

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