Advanced Endocrine Physiology (1st Year University notes)



Anterior Pituitary Hormones:

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- Prolactin (PRL) Minutary Glands •
- Growth Longere (GH) Bones and

GH being a major hormone affecting Postnatal Growth:

- Promotes bone lengthening
- Anabolic hormone Increases Lean Body mass, Increases Organ size and function and Reduces Adiposity •

Patterns of Release:

- Mean concentration of circulating GH varies throughout life
- Highest mean circulating concentration of GH during Puberty •
- Daily secretions are higher in Childhood •
- Lower concentrations in adulthood

Growth hormone exerts effects directly and indirectly:

- GH exerts most of its effects through release of IGF-1 ٠
- IGF-1 secreted by Liver and enters the blood to act as a hormone
- Growth hormone also stimulates synthesis and release of Insulin-like growth factor binding proteins which • bind circulating IGFs providing reservoir of circulating IGFs

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• Increased Protein synthesis and strength in Skeletal Muscles

Restricted Growth:

- Decreased GH secretion and IGF-1 production •
- Abnormally short stature •

Childhood Onset growth hormone Deficiency:

- Babies born with GH deficiency have normal new-born size and show no signs of GHD •
- Early and later childhood, GHD identified as slow growth compared to other children ٠
- Early diagnosis and treatment may lead to children achieving normal height and development ٠

Treatment:

- Made possible by availability of unlimited amounts of recombinant human growth hormone (rhGH) •
- Years of administration of this agent proved its safety and efficacy in therapy of various conditions associated with short stature

Rejuvenating powers of Growth Hormone:

- Stronger bones
- Faster wound healing and recovery •
- Younger, tighter skin
- Superior immune function
- Anti-aging
- Fat loss without diet
- Elimination of cellulite •
- m Notesale.co.uk brmance in extrcise ar Higher energy levels, increased peri •
- Re-growth of heart liver, spleen, kidneyr an ether organs shrinking with age •
- Greatel neart output and lower le •
- Improved cholesterol profile with higher HDL cholesterol and lower LDL cholesterol
- Better kidney function

Detection:

- Detection of GH difficult as of short half-life and pulsatile secretion, pattern with highly variable concentrations
- Cannot differentiate between recombinant human GH and Pituitary-Derived GH
- One study from Early 1990s was based on Anonymous survey reported up to 5% of American high-school ٠ students experienced use of GH as an anabolic agent