**DPT 6th**

**Course Title: Pharmacology II**

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**Note:**

**Attempt all questions**

**Each question carry equal marks**

**Pay attention to every point of question**

**Give to the point answers**

**Extra detail may leads to marks deduction**

2. How cryotherapy is effective in pain and edema? Explain the mechanism of agents that synergize and antagonize its effect with appropriate example.

**Ans no1 (a)**

* Cryotherapy is more effective in reducing pain nd edema depends on the type nd nature of injury.it can be used before or after exercise. In combination of cryotherapy with rehabilitation its more effective.cryotherapy shows its effects in many ways eg by reducing blood flow to an injured area cuz of which is reduced . it also act as analgesic. Reducing muscle spasm nd reducing tissues metabolism cuz of reducing blood flow to the injured site resulting in reducing pain.it can also reduce acute injury which shows an immediate pain.
* The most common type of cryotherapy is an ice pack. Its shows compart at thin layer of the skin nd shows its effect.another type is massage which also reduce pain nd swelling. The injured area is gently massaged nd thus u ll get the promenant result.
* **Explain the mechanism of agents that synergize and antagonize its effect with appropriate xample.?**

**Systemic heat:**

* It decrease muscles nd joint stifness in large area of the body.if we give skeletal muscle relaxant it increases its effect but sometime it cause severe hypotension.

**Ultravoilet radiation**.

* It increase wound healing if u ll give antibiotic it will synerfise its effect. Can also cause photo sensitivity.

**TENS**:

* Its used to decrease pain if we administer opiods or Nsaids with it so it will show double effect.

**Functional neuromuscular electrical stimulation**.

* Its used to strengthen skeletal muscle nd endurance. If patient also use skeletal muscle relaxant so it will anagonize its effect

1. What is the therapeutic application of systemic heat? What agents can affect its desired therapeutic response?

**Ans no 1(b)**

* By increasing the temperature of skin or soft tissue the blood increased by vasodilation. The metabolic rate and the tissue extensibility will also increase .heat increase oxygen uptake and accelerate tissue healing .it also increase the activity of destructive enzyme such as collagens and increase the catabolic rate.
* Systemic heat can mostly used in rehabilitation the therapeutic effects heat include increasing the extensibily of collagen tissue .

Agents that can affect its desired therapeutic response :

There are some agents

wich can eefect the desired function of systemic heat is NSAID oropoid .if we give it the same time withsystemic heat so it will increase its effect.and will coasu hypotension .

1. What is the main function of menstrual cycle? Enumerate its phases, write down each of the hormone name only that is dominant in each phase, explain termination phase in detail

**Ans no 2;**

> The main function are menestral cycle to activate the ovries and produce the ovam to the fertilization nd to make endometrium of utruis to the oewam Implation

* Menstrual cycle phases’

1. The follicular phase : in this phase FSH is going to relese through anterior pituitary whish is dorment nd other hormone are also relese in this phase is estogen
2. Ovalution: LH hormone in this phase is doment but a smaller FSH secretion also occxures in this pahse
3. Luteal phse : domenent estrogen nd pprognostern but vascular nd glandular secretion also occur
4. Corpos lutum regression nd termination of cycle even if fertilization dose not occur the carpuseletiem star regress because of continud absence of gondotropis ( LH,FSH) finally the endrometrium begins to slough off nd start the bleeding (the female reproductive cycle )onset of menesterl bleeding shows the end of one cycle nd the begening of next one.
6. Explain the effects glucocorticoids on Glucose, Protein, and Lipid Metabolism.

**Ans no3(a )**

* the gluicocorticoides (cortisol nd cortecostisone primerly control glucose metabolism nd prepare the body to deal with stress on other hand it it decrese the inflammation ns supess the immune sytem
* Its also effect on protin syntheses nd activate protin degrading in skeletal musclw in various catabolic condition also helpfull in the development of muscle atropy muscle protin break down is done by ubiquitin protesme dependendt pyrolysis by calcium dependent protin degradation may also be involved.
* Its also effects on lipids metabolisoum GC is catabolic in nature liberty energy during the time of strees anfd its also effects on a adipse tissue is conflicting because subject with elevated GHs present with central adiposity it also has antilpolytic effects on adipoctec increase lyopolysis after 48hrs of expure although the evidence is that it increase lipolysis.

1. How mineralocorticoids maintain the plasma volume?

**Ans no3 ( b**)

* Mineralcorticortid maintain the electrolyte concentration the elecrolye concentration of extra cellular of extra cellular fluid aldosterone which is the most importing minralocrticide maintain sodium balance by reducing exertion of sodium from the body .and also stim ilate rebsoption of sodium by the kudney . and aldosterone secretion is stimulated by rising blood of k. low blood Na and decresing blood volume and pressure.
* Adrenocorticoted also maintain maintain the osmolarity so minrelocoticoted maintain normal blood volume and promote sodium and water retention and increase urinary execretin of potassium and hydrogen ion. From the dissection we noticed that blood volume can not bre maintain without minralcortiscosteroids.

1. Differentiate between type I and type II diabetes mellitus

**Ans no 4 (a)**

* Diabetes:is chronic disease that occurs either when the pancreases does not produce enough insulin or when the body cannot effectively use the insulin it produce .it is a disease in which your blood glucose or blood sugar level are too high .due to the less production of insulin which function is regulate blood sugar .according to WHO diabetes as fasting blood glucose more than 126mg/dl or more on 2 and more occasions .
* ***Differentiate between type I and type II diabetes mellitus***

|  |  |  |
| --- | --- | --- |
| fetures | Type1 | Type 2 |
| Age of oneset | Any age (mostely young) | Mostely in adults |
| Onset | Sudden | Gradual |
| Insulin level | Low or absent | Normal decrese or increase |
| Body habites | Thin or normal | Often obese |
| prevelence | Less prevalence | More prevalence |
| atuantibodies | Present | Absent |
| control | It can be controlled without injection insulin | Some time possible to come off diabetes medication |

.tretment: in type 1 the insulin injection or pump are treated

In type 2 it can initialy treated mainly with out medication tabletes

Qn4(b) As per your opinion which of the insulin delivery device is more effective and why?

**Ans no4 (b)**

* The R U-500 insulin ia kind of is more effective and more common and too stronger. And use for the diabetes patient body does not make insulin then we prescribe artificial insulin son the body want large doses of the blood glucose (sugar) under control.

Why?

* Insulin is a hrmone to the work through lowering levels of glucose sugar in the blood concenterd (U-500) is a long acting insulin to start the work many hours after injection and also work for 24 hrs u-500 insulin is five time more then concerted than regular u-100 insulin. U-500 inulin is also work for the children with diabetes malites who have need signeficntly use 200 unit per day insulin.



( a) > Define iontophoresis, explain the mechanistic approach behind iontophoresis.

**Ans no5 (a)**

* iontoporedsis : it made of two words into means ions and phorosis the body its means transport through use of direct current the ions can be esily introduce to the body there can be used spesalized tecnice that use for electricle polarity the skin by bye elctro stimulation technique.

Mahanic approach bihand iontophoresis : the better concentration of ionized spicies expected to mov into some region of the skin or to the demaged skin with hair follicle and sweat glands

* The inontophorosis treatment electricle potinial mey changes molecular arranging of the of the sking and alter to skin permeabilty

The fiilp flop mechanim is more responsible to form stratum cornium which has reach source of keratin nd alpha helicle polypeptide.b

(b)qn05: Explain the general mechanism of hormone release and inhibition

**Ans no5 (b);**

* Hormonal stimuli refers the release of hormone in responce to another hormone. A number of endocrine glands release hormones when stimulated by another hormone released by endocrine gland.for example hypothalamus produces hormones that stimulate the anterior portion of pituitory gland.the anterior pituitory in turn releaese hormone when stimulate the thyroid gland to produce t3 nd t4. As the blood concentrations of of t3 nd t4 rises they inhibit both the pituitary nd hypothalamus in a negative feedback loop.
* When there is need of hormone through signal hormone release occurs into the blood stream nd reaches to its specific site but when there is large concentration of hormone release again signal is send to that specefc gland nd homones inhibition occurs(no more release of hormone Hormonal stimuli refers the release of hormone in responce to another hormone. A number of endocrine glands release hormones when stimulated by another hormone released by endocrine gland.for example hypothalamus produces hormones that stimulate the anterior portion of pituitory gland.the anterior pituitory in turn releaese hormone when stimulate the thyroid gland to produce t3 nd t4. As the blood concentrations of of t3 nd t4 rises they inhibit both the pituitary nd hypothalamus in a negative feedback loop.
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