**Iqra national university Peshawar**

**Hayat Abad phase 2.**



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**Question no # 1**

Ans:-

Nuclear medicine is directly involved in both the diagnosis and treatment of benign thyroid disease, which requires an understanding of the pathophysiology and management of thyroid disorders in addition to expertise in nuclear methodology.

Thyroid uptake and imaging, the principal nuclear tests in thyroid disease, may be used as follows:

**(1) Differential diagnosis of hyperthyroidism**:

A very low thyroid uptake suggests destructive ("subacute") thyroiditis, a self-limited disorder, whereas a normal or elevated uptake is consistent with toxic nodular goiter and Graves' disease. Scintigraphic characteristics also help differentiate between nodular and Graves' disease.

**(2) Function of thyroid nodules**:

Fine-needle aspiration biopsy with cytological examination (FNAB) is used routinely to assess for malignancy in thyroid nodules. Scintigraphy may be of assistance before FNAB. "Hot" nodules are generally benign and do not require FNAB, while "cold" nodules may be malignant.

**(3) Differential diagnosis of congenital hypothyroidism:**

Scintigraphy combined with ultrasound examination may be used to identify such conditions as thyroid agenesis, dyshormonogenesis, and incomplete thyroid descent. Treatment of Graves' disease and toxic nodular disease with (131)I may require greater clinical involvement and decision analysis compared with thyroid uptake and imaging.

**In case of treatment:-**

The following aspects of treatment are particularly important:

* Risk: Radioiodine treatment may occasionally aggravate hyperthyroidism, Graves' ophthalmopathy, and airway obstruction caused by large, nodular goiters. Alternative treatments, including the temporary use of antithyroid drugs, and surgery for nodular goiters, may be considered.
* Radioiodine dose: Cure of hyperthyroidism with a single (131)I treatment is desirable, though not always possible. Such factors as a large goiter, severe hyperthyroidism, and prior propylthiouracil therapy, may contribute to treatment failure.
* Informed consent: A detailed discussion with the patient regarding the clinical risks, outcomes, and side effects of (131)I is a critical component of successful management.

**Question no 2**

**Ans:-**

**Polycystic kidneys:-**

Polycystic kidney disease (PKD) is an inherited disorder in which clusters of cysts develop primarily within your kidneys, causing our kidneys to enlarge and lose function over time.

Cysts are noncancerous round sacs containing fluid. The cysts vary in size, and they can grow very large. Having many cysts or large cysts can damage our kidneys.

It also can cause cysts to develop in your liver and elsewhere in your body. The disease can cause serious complications, including high blood pressure and kidney failure.

**Symptoms**

Polycystic kidney disease symptoms can include:

* High blood pressure
* Back or side pain
* Headache
* A feeling of fullness in your abdomen
* Increased size of your abdomen due to enlarged kidneys
* Blood in your urine
* Kidney stones
* Kidney failure
* Urinary tract or kidney infections

**Causes**

People who have PKD(polycystic kidneys disease) were born with it. PKD is almost always inherited from a parent or from both parents.

People of all genders, ages, races, ethnicities and nationalities can have PKD.

Men and women get PKD equally as often. If we have a blood relative with PKD, we are more likely to have PKD or carry the gene that causes it.

If we carry the gene that causes PKD but we do not have the disease, we are called a carrier. This is possible with autosomal recessive PKD

**Prevention**

Their is no possible prevention for this disease but some how we may better our healthy living style and increases the prevention chances.

Some tips for living healthy include:

* Keep a healthy blood pressure.
* Keep a healthy blood sugar level.
* Keep a healthy weight.
* Follow a low-salt, low-fat diet.
* Limit alcohol.
* Do not smoke or use any tobacco product. If you smoke or use tobacco, quit now.
* Exercise for at least 30 minutes a day, most days of the week.
* Take all prescription medicines as your doctor tells you to.
* Do not take more than the recommended dose of over-the-counter medicines.

**Diagnosis**

For Polycystic kidney disease, certain tests can detect the size and number of kidney cysts we have and evaluate the amount of healthy kidney tissue, including:

* Ultrasound
* CT scan
* MRI

**Treatment**

**High blood pressure.** Controlling high blood pressure can delay the progression of the disease and slow further kidney damage.

**Pain.** You might be able to control the pain of polycystic kidney disease with over-the-counter medications containing acetaminophen.

**Bladder or kidney infections**. Prompt treatment of infections with antibiotics is necessary to prevent kidney damage.

In case of kidney failure the removal of metabolicor waste products are essential for which we mostly done through dialysis process.

**Blood in the urine.** We will need to drink lots of fluids, preferably plain water, as soon as we notice blood in your urine to dilute the urine. Dilution might help prevent obstructive clots from forming in your urinary tract.

**Question number 3**

**Ans:-**

**Lithotripsy:-**

Lithotripsy is a medical procedure that uses shock waves or a laser to break down stones in the kidney, gallbladder, or ureter.

* The remaining particles of small stone will exit the body when a person urinates.
* It is common to develop stones in the kidneys, gallbladder, or ureter. Sometimes stones are small enough to leave the body during urination without a person noticing. Large stones, however, can cause pain and block the flow of urine.
* If stones do not pass, they can damage the kidneys and urinary tract. When medications do not help, a lithotripsy procedure can break the stones down into small pieces so they can pass out in the urine.
* The two types of lithotripsy are extracorporeal shock wave lithotripsy (ESWL) and laser lithotripsy.
* Both procedures can help eliminate bothersome stones quickly and effectively. The type of treatment a doctor recommends will depend on a range of factors, such as the type of stones and the individual’s overall health.

"It is a therapeutic tool against the kidney or other organs stones."

**General criteria of performing this procedure:-**

Lithotripsy treats kidney stones by sending focused ultrasonic energy or shock waves directly to the stone first located with fluoroscopy (a type of X-ray “movie”) or ultrasound (high frequency sound waves).

The shock waves break a large stone into smaller stones that will pass through the urinary system.

**Question number 4.**

**Ans:-**

The suffix "-otomy," or "-tomy," refers to the act of cutting or making an incision, as in a medical operation or procedure. This word part is derived from the Greek -tomia, which means to cut.

***Examples***

**Anatomy (ana-tomy):** the study of the physical structure of living organisms.

**Autotomy (aut-otomy):** the act of removing an appendage from the body in order to escape when trapped.

**Craniotomy (crani-otomy):** surgical cutting of the skull, typically done to provide access to the brain when surgery is needed.

**Episiotomy (episi-otomy):** surgical cut made into the area between the vagina and anus to prevent tearing during the child birthing process.

**Gastrotomy (gastr-otomy):** surgical incision made into the stomach for the purpose of feeding an individual who is incapable of taking in food through normal processes.

**Hysterotomy (hyster-otomy):** surgical incision made into the uterus. This procedure is done in a Cesarean section to remove a baby from the womb.

**Phlebotomy (phleb-otomy):** incision or puncture made into a vein in order to draw blood.

**Laparotomy (lapar-otomy):** incision made into the abdominal wall for the purpose of examining abdominal organs or diagnosing an abdominal problem.

**Lobotomy (lob-otomy):** incision made into a lobe of a gland or organ. Lobotomy also refers to an incision made into a lobe of the brain to sever nerve tracts.

**Rhizotomy (rhiz-otomy):** surgical severing of a cranial nerve root or spinal nerve root in order to relieve back pain or decrease muscle spasms.

**Tenotomy (ten-otmy):** incision made into the tendon in order to correct a muscle deformity.

**Question number 5**

**Ans:-**

**Urinary tract infection (UTI):-**

A urinary tract infection, or UTI, is an infection in any part of your urinary system, which includes your kidneys, bladder, ureters, and urethra.

Normally in this disease the female ratio is usually higher rather than males, Female are infected 1:2 while men are 1:10.

**Symptoms of UTIs**

The symptoms of a UTI can include:-

* A burning feeling when you pee
* A frequent or intense urge to pee, even though little comes out when you do
* Cloudy, dark, bloody, or strange-smelling pee
* Feeling tired or shaky
* Fever or chills (a sign that the infection may have reached your kidneys)
* Pain or pressure in your back or lower abdomen

**Causes:-**

The vast majority of urinary tract infections (UTIs) are caused by the bacterium Escherichia coli (E. coli), usually found in the digestive system.

Chlamydia and mycoplasma bacteria can infect the urethra but not the bladder.

**Types of UTIs:-**

An infection can happen in different parts of your urinary tract. Each type has a different name, based on where it is.

**Cystitis (bladder):** You might feel like you need to pee a lot, or it might hurt when you pee. You might also have lower belly pain and cloudy or bloody urine.

**Pyelonephritis (kidneys):** This can cause fever, chills, nausea, vomiting, and pain in your upper back or side.

**Urethritis (urethra):** This can cause a discharge and burning when you pee.

**Prevention**:-

There are several measures that can be taken to reduce the risk of developing a UTI:

* Drink lots of water and urinate frequently.
* Avoid fluids such as alcohol and caffeine that can irritate the bladder.
* Urinate shortly after sex.
* Wipe from front to back after urinating and bowel movement.
* Keep the genital area clean.
* Showers are preferred to baths and avoid using oils.
* Sanitary pads or menstrual cups are preferred to tampons. If you want to buy menstrual cups, then there is an excellent selection on Amazon with thousands of customer reviews.
* Avoid using a diaphragm or spermicide for birth control.
* Avoid using any perfumed products in the genital area.
* Wear cotton underwear and loose-fitting clothing to keep the area around the urethra dry.

**Diagnosis**

**Diagnostic imaging:** This involves assessing the urinary tract using ultrasound, CT and MRI scanning, radiation tracking, or X-rays.

**Urodynamics**: This procedure determines how well the urinary tract is storing and releasing urine.

**Cystoscopy**: This diagnostic exam allows the doctor to see inside the bladder and urethra with a camera lens, which inserted through the urethra through a long thin tube.

**Treatment:-**

In most cases, the cause is bacteria. UTIs caused by bacteria are treated with antibiotics.

In some cases, viruses or fungi are the causes. Viral UTIs are treated with medications called antivirals.

Often, the antiviral cidofovir is the choice to treat viral UTIs. Fungal UTIs are treated with medications called antifungals.

End