

The Disease of Kings Gout Arthritis

Causes Symptoms Diagnosis Treatment

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Abstract- Arthritis is one of severe and most common disease present in the human being through the world ,over 350 million people are suffering from the arthritis one of that is gout arthritis one of the painful type of arthritis in this disease the monosodium urate crystals are deposited inside toes and legs joint and produced swell ,redness, itchiness ,and severe joint pain many people didn't even look up to these disease and it take the enormous shape in future due to this disease many peoples are dying prematurely detected early the the lifespan of person can be increased so this article explains pathophysiology symptoms causes diagnosis and treatment to aware people what to do in disease condition aware of the disease.

Keywords- gout arthritis, kings toe, uric acid, pain .

I. INTRODUCTION

This This gout is one of the painful type of arthritis it is also known as the king's toe because the effect of this diseases is mainly seen in the toe region of foot according to researchers there are at least 41.2 millions people are suffering from gout and the numbers considered to double due to lack of awareness in people of this disease the small amount of people who are aware of the disease take proper treatment for the disease one who is not aware of this disease cannot change the eating habits and the severity of this disease s is increases constantly. Also the one regular myth about gout is that people who are suffering are think the pain because of there day today work or due to wrong shoe shape they are earing in day today life but it is way more critical than that that.

Arthritis is define as disease in witch the stiffness, inflammations are produces in the joint because of witch the patient feel the pain in joint among the type of the arthritis witch osteoarthritis and rheumatoid arthritis the gout is one of the type of the inflammatory arthritis. It is known to human being from the Egyptian in 2640 BC. Hippocrates found gout in the 5 century before Christthe and explained it as unable to walk disease. Hippocrates shows clinical result of goutarthritis in aphorism. In many system of medicinal values, it is known that an uncontrolled consumption of food containing high purine is the primary cause of gouty arthritis, because of witch accumulation of urates in the articular and

periarticular tissues. As early as the 4 before Christ, Hippocrates shows people what gout is as a disease of not only old men but every age is suffering from it.

The one of the main caused of the gout high profile life style. The Greek physician Galen state that gout arthritis shows very less in women's than man and the age is also the factor in it. The one who is suffering from these disease have hyperuricemia problems witch is increase in the serum uric acid concentration. The supersaturation caused formation of the urate crystal and they are goes in the joint spaces and caused the pain and the inflammation of the joint mainly in the toe. The unrolled intake of the food like organ meats, game meats, some types of fish, fruit juice, sugary sodas and alcohol leads to this painful disease.

II. PATHOPHYSIOLOGY (IN SHORT)

It's the inflammatory arthritis witch is caused by the accumulation of the urate in the joints of the patient the inflammation. It is accoutred due to the immune systems response to pathogens in this case witch are the urate crystals. the microphages witch are present at joints they phagocytose the M.S.U crystals. When person eat high purine food the free fatty acid concentration increases and they release IL-1 β from macrophages when urate crystals accumulate the protein scaffold inflammasomes formed in cytosol of microphages witch is high molecular weight protein complex because of witch the bIL-1 β became biologically active start producing in the cells it regulates cell proliferation, differentiation and apoptosis in gout. IL1 done transcription of the proinflammatory cytokines witch are proinflammatory and the inflammation induced in simple language the high purine foods, insufficient renal clearanceexercise, leads to the gout arthritis by high uric acid level and accumulation of urate crystal in joints space .



III. TYPES OF GOUT

A. ACUTE GOUT

Acute gout is instant onset action of pain, erythema, limited range of motion and swelling of the joint. English physician Thomas Sydenham's said healthy person goes to sleep and feel pain after med knight in toe and various joint of feet and also some shivers.occurred in the age of 30 to 50 in men in the women after menopause the acute gout only affect in single joint and some time first attack in gout arthritis of the patient .

B. INTERCRITICAL GOUT

It is an asymptomatic phase of gout after the recovery it is period between 2 successful gout attacks as time passes the intervals became shorts the time in between the urate crystals start forming.

C. CHRONIC TOPHACEOUS GOUT:

It is chronic stage of gout in witch there is permeant damage to the joint and kidney and person feels colour change in the area of the pain, it occurs after many years after the first attack of the gout. It occurs in the finger joints and cold areas of the body.

D. RECURRENT GOUTY ARTHRITIS:

The timing between two gout attack decrease as much as within days and lend enormous damage to patient, timing is less as compared to intercritical gout.

E. ADVANCED GOUT:

when untreated for long time there is the large size urate crystals are form known as tophi, in finger, elbow or in achilleas tendons.

F. PSEUDOGOUT:

This is condition always taken as gout but not part of gout the deposition of the calcium phosphate shows same symptoms as gout alterities.

G. KIDNEY STONES:

This is not type of the gout but the continuous gout caused the kidney stone in the patient. This type of deposition is more painful than the toe deposition of urate crystals very difficult to treated remain untreated it leads to the kidney

failure long time and also possible toxicity is emitted from it in long run ,

IV. SYMPTOMS

- **SEVERE JOINT PAIN :**

Gout not only accumulates in the big toe of the foot but also can in any joint. Other joints include the ankles, knees, elbows, wrists fingers. The pain is severe in the first 4 to 12 hours after it begins. The pain is severe sometime patientcant even sleep at all due to continuous embark of the pain the felling is like needles are prcing through your leg and the pain is feel your foot is tearing from inside.

- **DISCOMFORT:**

When severe pain lessen, jointpain may last from a few days to a few weeks. Attacks after thatlikely to last longer and affect more type joints like knees and fingers. When pain is spread through other joint the joint start swallowing and it is impossible to do the day today work regularly because of severe pain, when pain reach in the hand the hand work is impossible to do.

- **INFLAMMATION AND REDNESS :**

The joints swollen due to deposition of urate crystals and the after effect. The joint where the gout arthritisstrike it feels tender. Due to the effect of the immune system small amount of the warmness is located at the affected area. With the warmness there is small amount of colour change at the attack site and the colour produces is probably the red one. When there is case of thye recurrent gout the colur became mortemore red as time passes.

- **NO RANGE OR LIMITED RANGE OF MOTION:**

As gout attack increases one is not be able to move there joints normally there is restriction to the movement of the person because whenever he try to move the pain increases and with increase pain the condition of patient is go verse than he imagine due to movement it stress the inflame zone and inflammation increases severely.

- **URGE OF DRINKING WATER:**

Many people feel urge of drinking water suddenly due to bodies diuretics affect to remove the excess amount of the uric acid from the body via the way of the urination.

- **FEELING OF COLD, SHIVERS**

V. CAUSES

The gout is caused due to the elevated uric acid level in blood and deposition of the urate crystals in the spaces of the joint which are very painful and severe the causes of the gout are ;

A. AGE :

The gout can be seen in age between the 30 to 60 due to the slow build up of the uric acid throughout the life span but now according to research it can be seen in men of 20 years due to genetic and lifestyle reasons, the highest level of uric acid can be seen in men of age 79 to 80

B. GENDER:

Generally men produce more uric acid than women. But when women's menopause happens there is also seen an elevated rate of the uric acid.

C. GENETICS AND HEREDITARY:

If there is any type of the gout history in the family the person likely get the gout from ancestors which is also known as genetic predisposition. These types of gout are very difficult to treat and have tolerance to the medication given to patients. This type of gout is more painful than other types.

D. LIFESTYLE FACTORS:

High alcohol consumption leads to accumulation of the uric acid in the body. Also, high purine rich food causes the increase in the amount of uric acid as the age of the fast food one eats daily leads to the uric acid concentration in the blood.

E. LEAD EXPOSURES:

In some cases of the gout, the lead exposures or chronic lead exposures cause gout due to isolated proximal tubular defects caused by lead.

F. OBESITY:

If the person is overweight there are a lot of chances of the gout due to a large amount of tissue fat breakdown. The body is not able to break the excess fat and unable to remove uric acid from the blood. Gout happens

G. MEDICATION:

Diuretic drugs, salicylic acid, and niacin can help to increase uric acid level in the body.

H. HEALTH PROBLEMS:

If a person has kidney disease, hypertension.

VI. DIAGNOSIS

The right diagnosis of the gout is really necessary because some types of pseudo gout are treated with gout medication or sometimes the main reason of a gout attack is not found and the disease severity increases.

Some tests for diagnosis are as follows:

- **JOINT FLUID TEST:**

It is also called as arthrocentesis. It is one of the important tests. In this test, the urate crystals are present or not is checked. This is a proper test for checking gout arthritis.

- **URINE TEST**

The urine test is done by taking a urine sample of the patient who gives the amount of uric acid in the urine. Sometimes the body shows a high level of the uric acid in the urine and if there is large inflammation and severe pain, the uric acid level in the urine is below normal or sometimes it goes under zero and the physician knows the main reason of the level building of uric acid.

- **BLOOD TEST:**

This is one of the common tests prescribed by the doctors. In case of the gout, this test checks the amount of the uric acid present in the blood. It also shows the normal, critical, and excess amount of the uric acid present in the blood at the given time so the physician gives a proper dose of the tablet.

- **X-RAY AND MRI:**

This only helps in long-term gout to check the erosion of the bones, damage of the joints, and size of the urate crystals. Many people take treatment in the early stage of the gout due to pain, so this test is only applicable for some types of people.

- **ULTRASOUND:**

Ultrasound machines are used to detect the amount of the urate crystal in your joints.

- **DUAL-ENERGY
COMPUTERIZED TOMOGRAPHY (DECT):**

In this test the various angel images taken of the joints where is deposition of the urate crystals are form.

- **TOUCH TEST:**
- This test is done by moving hand gently on the toe region of foot witch is affected by uric acid.

VII. TREATMENT AND DRUGS

A. AYURVEDIC TREATMENTS AND DRUGS:

1. TRIPHALA:

Witch is made of 3 fruitsbibhitaki, amalaki, and haritaki have and anti inflammatory properties used as drugs in churn form.

2. Giloy:

The medical benefits of giloy2017 review shows that “the juice extract from the stem of giloy is highly effective for treatment of gout as it helps to neutralize the increased uric acid levels in the body.” It has anti inflammatory and pain reliving properties.

3. GINGER:

It have anti inflammatory properties used in many disease like gout.

4. TURMERIC:

As 2016 and 2013 studies turmeric is used for reducing inflammation in gout and helpful in many type of the arthritis given directly in milk or in curries.

5. CHERRIES AND DARK BERRIES:

According to ayurveda eating cherries and dark berries reduces uric acid level.

6. NEEM :

Neem paste is applied over and affected area it has anti inflammatory properties but there is no proper evidence that neem can cure the gout but it can certainly remove small amount of flairs of got when apply fresh and in paste form.

7. DIETARY CHANGES:

As for affect of the medicines proper diet should be follow by patient and if complete veganism accepted it is good for the patient and also cut of dairy product is necessary while taking medicine ayurvedically.

B. UNANI TREATMENT FOR GOUT:

Chobchini (Smiles china), suranjanshirin (Cholchicum luteum), sibr (Aloe barbadensis) in ratio of 4:4:2 The patient condition body temperature, food habit, mijaj, colour of affected area urine transfer age sex and weight are check and accordingly the dosage are created.

C. ALLOPATHIC MEDICINES

Allopathic medicines are most effective in gout due to there fast action and pain relief.

- **NSAIDS:**
They reduce the inflammation and pain
Ex. Indomethacin, ibuprofen, naproxen.
- **COLCHICINE:**
This is early taken tablet at start of the gout effective in realising pain and also reduces symptoms in future.
- **PEGLOTICASE:**
These medication is for the long time gout patient witch have tolerance to the other medications.
- **MEDICATION THAT BLOCK URIC ACID PRODUCTION:**
Medication like allopurinol,febuxostat help in blocking the uric acid production in body.
But it has several side effects like nauseas and rashes on body where uric acid attack.
- **MEDICATION HELPS IN URIC ACID REMOVAL:**
Probenecid is medication witch helps kidney in removal of the uric acid.

VIII. PREVENTION

- Drink water about 2 to 4 litters per day.
- Eat low purine reach diet.
- Eat less amount of the fatty substances .
- Eat 113 to 170 grams of meat,fish,dairy daily more.thenthat cause the build of the uric acid.
- Complete veganism help
- Exercises daily help in breakdown of the fatty acid and removal of the uric acid properly.



IX. CONCLUSION

As the research progresses on disease like the gout the patient should aware of there disease the pathophysiology, causes,symptoms, diagnoses, treatment in various field like ayurveda unani and allopathy help patient to understand disease and take proper path of treatment.

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REFERENCES

- [1] DR. C. M. JANGME AND R.DWADULKAR Pathophysiology 12 desase of bones and joints 12.6 gout
- [2] GAFAR RAGAB, MOHSEN ELSHHALY , THOMAS BARDIN gout a disease May2017 Journal of Advanced Research 8(5)DOI:10.1016/j.jare.2017.04.008
- [3] Lance Silverman arthritis help knowledge for value updated on 12/2/2020
- [4] Dalbeth N., Merriman T.R., Stamp L.K. Gout Lancet. 2016;388(10055):2039–2052
- [5] Mandal A.K., Mount D.B. The molecular physiology of uric acid homeostasis. Annu Rev Physiol. 2015;77:323–345
- [6] Torres R.J., Puig J.G. Hypoxanthine-guanine phosphoribosyltransferase (HPRT) deficiency: Lesch-Nyhan syndrome. Orphanet J Rare Dis. 2007;2:48.
- [7] Emmerson B. Hyperlipidaemia in hyperuricaemia and gout. Ann Rheum Dis. 1998;57(9):509–510
- [8] Busso N., Ea H.K. The mechanisms of inflammation in gout and pseudogout (CPP-induced arthritis) Rheumatism. 2012;63(4):230–237.
- [9] MARK D. HARRIS, M.D., Wilford Hall, USAF Medical Center, San Antonio, TexasLORI B. SIEGEL, M.D.,

Finch University of Health Sciences, Chicago Medical School, Chicago, IllinoisJEFFREY A. ALLOWAY, M.D., Wilford Hall, USAF Medical Center, San Antonio, TexasAm Fam Physician. 1999 Feb 15;59(4):925-934.

- [10]Huppertz A., Hermann K.G., Diekhoff T., Wagner M., Hamm B., Schmidt W.A. Systemic staging for urate crystal deposits with dual-energy CT and ultrasound in patients with suspected gout. Rheumatol Int. 2014;34(6):763–771