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RHEUMATOID ARTHRITIS

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Abstract:

Rheumatoid arthritis (RA) is a chronic, inflammatory, systemic autoimmune disease, affecting the joints with varying severity among patients. The risk factors include age, gender, genetics, and environmental exposure (cigarette smoking, air pollutants, and occupational). Many complications can follow, such as permanent joint damage requiring arthroplasty, rheumatoid vasculitis, and Felty syndrome requiring splenectomy if it remains unaddressed. As there is no cure for RA, the treatment goals are to reduce the pain and stop/slow further damage. Here, we present a brief summary of various past and present treatment modalities to address the complications associated with RA.

Keywords:

Rheumatoid arthritis, Boutonnière deformity, Swan neck deformity.

1.INTRODUCTION

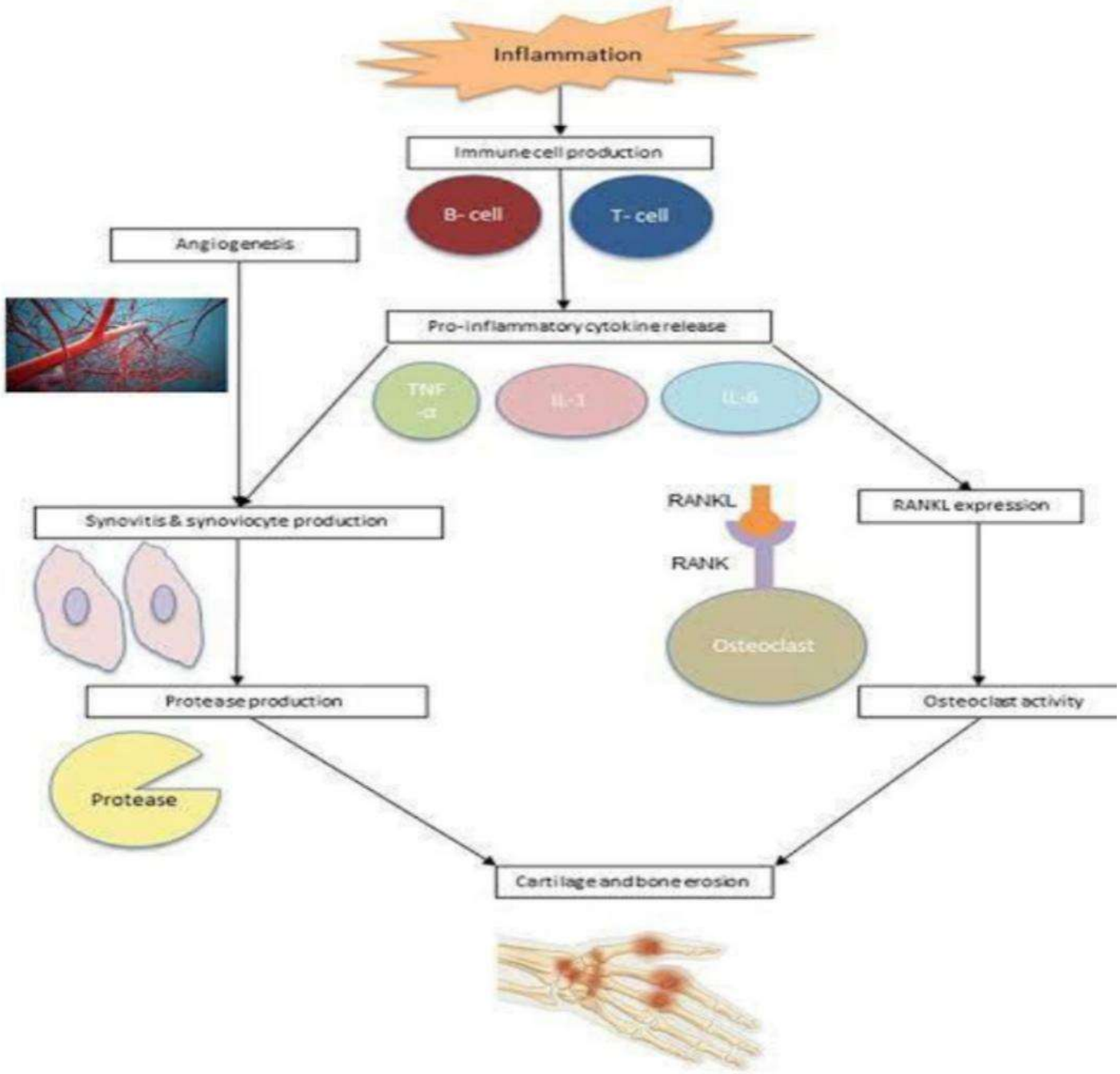
The inflammatory disease known as rheumatoid arthritis is defined by persistent inflammation, granulation, and joint degradation. It is a long-term, symmetrical, systemic inflammatory polyarthritis that mostly affects the tiny diarthroidal joints in the hands and feet.[1] Globally, the prevalence of RA is 1% and rising as the population does.[2] Many diseases are now brought on by changes in lifestyle, such as poor eating habits, sedentary behaviour, and incorrect body position, which throw off the biological clock.[3] The sickness known as Amavata also has a similar aetiology.[4]

Rheumatoid arthritis is a systemic inflammatory and autoimmune disease that mostly affects the synovial joints. Patients with rheumatoid arthritis may occasionally experience extra-articular symptoms such rheumatoid vasculitis (RV). When vasculitis with notable clinical signs was reported in patients with rheumatoid arthritis in the 1960s, the idea of rheumatoid vasculitis began to take shape.[5,6] Weakness, weight loss, skin rashes, cutaneous ulcerations, gangrene, peripheral neuropathy, and visceral infarction are among the many clinical signs of vasculitis; skin manifestations are present in about 90% of individuals with rheumatoid arthritis who also have rheumatoid vasculitis. [7, 8]

The influx of inflammatory cells into the joints, which results in the growth of synoviocytes and the breakdown of bone and cartilage, is what defines the inflammatory process.

Current rheumatoid arthritis treatments aim to reduce the disease's associated pain and inflammation with non-steroidal anti-inflammatory drugs (NSAIDs) and slow its progression with disease-modifying anti-rheumatic medications (DMARDs).The immunological mechanisms underlying the development of rheumatoid arthritis are inhibited by DMARDs. Although there are few medications that work through various pathways, those that

combine the effects of NSAIDs and DMARDs may be more effective in treating rheumatoid arthritis. Therefore, NSAIDs and DMARDs are used in combination to treat rheumatoid arthritis [1]. Patients with rheumatoid arthritis often look for alternative treatments that are less harmful, more effective, and require fewer pills because of the chronic nature of the condition, their late age, and the negative side effects of NSAIDs and DMARDs. As a result, they frequently favour complementary and alternative therapies [2].



Rheumatoid arthritis

2.case

Two patients with non-healing ulcerations of the ankle and lower limb were among the eight patients brought to the hospital. Fever was linked to joint pain. Reduced urine production and yellowish urine discolouration were noted.

During the work, a total of 35–40 patients were taken into consideration, of whom 10 had arthritic pain, 15–17 had joint pain accompanied by inflammation, and 8–10 had back discomfort.

3. Present illness history :

- The patient was admitted with an ankle ulcer that was not healing.
- Fever was linked to joint pain
- No lingering joint deformity was observed.

4. Medical history of the patient:

Pain seemed to have started 10 to 15 months ago. No history of coronary artery disease, diabetes mellitus, jaundice, or hypertension was found. No post-medical history was present.

5.Physical examination:

- The patient was alert and focused during the general assessment.
- The pulse rate was normal (no patient had hypertension)
- Bp: within the normal range (no patient had hypertension)
- 12 breaths per minute The respiratory system has equal
- Unobstructed air admission on both sides
- S1 and S2 sounds are normal on the CVS
- There is no functional neurological disease on the CNS.
- The alimentary system is soft and non-tender, with no hepatomegaly or splenomegaly.
  - ✓ On physical examination there was no any abnormality observed.

6.Laboratory investigation:

- **Urine:**

Sr no.	Test	Normal Range
1	Sugar	0-0.8 mmol/L
2	Albumin	<30 mg/g
3	Pus cell	1-2

- **Blood:**

Sr no.	Test	Normal Range
1	Serum bilirubin	1 mg/dl
2	Serum glutamic-oxaloacetic transaminase (SGOT)	8-45 unit/L
3	Serum glutamic pyruvic transaminase (SGPT)	7-56 unit/L
4	Alkaline phosphate (ALP)	44-147 unit/L
5	Superficial thrombophlebits (STP)	5.5-7.5 gm%
6	Serum albumin	3.4-5.4 g/dl
7	Random blood sugar (RBS)	80-120 mg/dl
8	Urea	5-20 mg/dl
9	Serum creatinine	0.6-1.3 mg/dl

10	Sodium	135-145 meq/l
11	Potassium	3.6-5 meq/l
12	Erythrocyte sedimentation rate (ESR)	<20 mm/hr
13	Rheumatoid factor (RF)	0-20 unit/ml

Report:

- A positive Rf factor was discovered.
- It was discovered that the erythrocyte sedimentation rate (ESR) was higher than usual.
- In general, the patients had vitamin deficiencies.
- The results of the other blood and urine tests were normal.

7. Provisional diagnosis:

- Chronic ulcer
- Rheumatoid arthritis
- Ischaemia of the legs
- A patient who was indoors also had a fever.

8. Evaluation:

1. Diagnosis:

- Chronic ulcer
- Rheumatoid arthritis Ischaemia of the legs

2. Therapy is required:

- An elevated erythrocyte sedimentation rate suggests the existence of an inflammatory disease.
- The alleviation of rheumatoid arthritis pain.

3. Treatment objective:

- The treatment's objective is to reduce inflammation and pain.
- Prevent the deterioration of joints.
- Enhance the patient's capacity to function.
- Keep up a regular lifestyle.

4. Assessment of therapy: Drug prescribed to the patient's

a) Ranitidine:

- Name brand: Aciloc 150 Tab
- Classification: H2 receptor blocker
- Use: As a gastro-protective medication (since indomethacine can cause stomach ulcers).

b) Cloxacillin:

- Brand name: Neoclox 250 cap
- Drug class: penicillin antibiotic
- Indication: To cure bacterial infection
- Side effects: nausea, diarrhoea, and mouth sores.

c) Ceftriaxone:

- Class of drug: antibiotic Cephalosporin
- Use: to treat bacterial infections
- Brand name: Hicef 200 Tab.

d) Heparin:

- Class of drug: anticoagulant
- Use: To prevent venous thromboembolism
- Name: Hep inj.

e) Sulfasalazine:

- Classification: Disease Modifying Anti-Rheumatic Drug (DMARD)
- Use: To treat rheumatoid arthritis
- Adverse effects: itching, and rashes
- Brand name: saaz ds Tab. (Produced by: ipca Lab. Ltd)

. Sazo 500 Tab. (mfg by: Wallace pharmaceuticals Pvt. Ltd.)

f) Methotrexate:

- Drug class: Disease modifying anti-rheumatic drug (DMARD)
- Drug indication: As a first-line treatment for RA.
- Adverse consequence: Reduced hunger
- Brand name: Folitrax 7.5 Tab. (produced by ipca Lab. Ltd.)

Sazo 5 Tab. (Wallace pharmaceutical Pvt. Ltd)

g) Indomethacine:

- Classification: Non-steroidal anti-inflammatory medicine (NSAID)
- Use: To lessen inflammation-related fever, discomfort, and swelling. It may result in stomach ulcers as a side effect.
- Donica 100 cap is the brand name. It is manufactured by Ipca Lab. Ltd

h) Folic acid:

- Brand name: Folvite 5 Tab
- Drug class: vitamin supplement
- Indication: Because methotrexate might result in folic acid deficiency.

i) Prednisolone:

- Corticosteroid drug class Use: To treat rheumatoid arthritis by acting as an anti-inflammatory agent.
- Weight gain and sleeplessness are side effects.
- The brand name is Wysolone 5 Tab. (produced by Pfizer Ltd.

j) Colistazole:

- Classification: Anti-platelet medicine
- Use: To stop platelets from clumping together
- Adverse effects: headache, lightheadedness, diarrhoea, and nausea
- Brand name: Pletoz 100 Tab.

k) Warfarin:

- Class of drug: anticoagulant
- Brand name: Warf 5 Tab

- Indication: To avoid blood clotting.

l) Cholecalciferol:

- Brand name: Uprise-D3 60K cap
- Indication: Treat and prevent bone loss
- Drug class: vitamin and calcium supplement.

m) Ofloxacin:

- Brand name: Oflox 200 Tab
- Class of drug: antibiotic
- Indication: to cure bacterial infection.

n) Aspirin:

- Brand name: Ecosprin 75 Tab
- Medicine class: non-steroidal anti-inflammatory drugs (NSAIDs)
- Indication: to lower fever and pain.

❖ Since the patient was unconscious, oral dose forms were difficult to provide, thus ranitidine, cloxacillin, ceftriaxone, and heparin were injected to limit first pass metabolism and provide a quick onset of action.

9. Reason for the therapy:

- ✓ The therapy's justification is that disease-modifying anti-rheumatic medications are thought to be the first line of treatment for RA.
- ✓ When beginning a new DMARD, short-term glucocorticoid treatment is taken into consideration.
- ✓ A combination of DMARDs is better than a single medication.
- ✓ Methotrexate should only be administered once a week, hence the frequency is incorrect.

10. Monitoring:

- ✓ Keeping an eye out for drug-related adverse effects.
- ✓ Since DMARDs are administered, it is recommended that LFT and CBC be checked every two to four weeks for the first three months.
- ✓ During discharge, these monitoring requirements were not met.

11. Physician's advice:

- ✓ Get enough sleep.
- ✓ Inflamed joints will experience less stress, and additional damage will be avoided.
- ✓ Avoid excessive periods of inactivity since this might cause harm to your muscles and joints.
- ✓ Avoid using electrotherapy, heat, or ice to relieve joint discomfort and swelling.
- ✓ Perform exercises as prescribed by the physiotherapist to mobilise joint injury and strengthen the joints.
- ✓ Use a walker or other supportive device to shield your joints from too much strain.
- ✓ Aim to maintain a healthy body weight to prevent joint stress.
- ✓ Take the medication exactly as prescribed.
- ✓ Eat foods high in omega-3 fatty acids, such as fish, olive oil, etc., to help reduce swelling.

12.CURRENT SCENARIO OF HERBAL DRUGS IN RHEUMATOID ARTHRITIS

Around the world, herbal medicine serves as the basis for numerous traditional medical systems. Currently, about 25% of crude medications are made from these botanicals, and another 25% are made from naturally occurring compounds that have undergone chemical alteration [27]. Herbal treatments make up a sizable portion of alternative medicine. India is a wealthy country that also has a vast array of medical plants and numerous well-known cures, many of which are still in use today. According to the ancient Indian Ayurvedic, Unani, and Tibbi medical systems, around 2000 plants have therapeutic properties [28]. Several investigations on the potential use of herbal remedies to treat arthritic and diabetic illnesses in experimental animals have also been conducted by us [29, 30].

- Some of the herbal medicine used to treat arthritis are given below:

1. For ages, the Indian traditional and ayurvedic medical systems have utilised ginger (Zinziber officinalis, Zinziberacea) as an anti-inflammatory. India produces half of the world's harvest, which is grown throughout tropical and subtropical Asia. It has been determined that five components of ginger suppress prostaglandins. In vitro, gingerol, another component of ginger, prevented the expression of inducible nitric oxide synthase (iNOS) and the generation of NO when lipopolysaccharide (LPS) was present [31].

2. Since its discovery in the late 1700s, pineapple has also been utilised as a medical plant. It has been claimed that the pineapple stem extract bromelain possesses anti-inflammatory properties. It is a broad term for a group of sulfhydryl proteolytic enzymes that are derived from the pineapple plant, Ananas comosus. Peroxidase, acid phosphatase, and a number of protease inhibitors are among bromelain's active ingredients. 72% of all patients with RA reported less pain and swelling after trying bromelain [33].

3. Curcumin, an active anti-inflammatory compound found in turmeric (Curcuma longa), is a frequent ingredient in Chinese and Indian (Ayurvedic) medicinal systems. In the tropical parts of Southern Asia, this perennial plant reaches heights of three to five feet. Curcuma's rhizome, or root, is used to make food and medicine. The primary active ingredient in this herb, curcumin, has antioxidant qualities. Regular use of curcuma by RA patients has been shown to have anti-arthritic benefits, including significant improvements in morning stiffness, walking time, and joint swelling [34].

4. In traditional medicine, saffron (Crocus sativus, Iridaceae) is frequently used for a number of purposes, including expectorant and antispasmodic. It is a flowering perennial plant that only reaches a height of 40 cm. Commonly grown in Kashmir, it is also found in Northern America, Greece, and Spain. Because saffron stigma contains carotenoids and crocetin, it has anti-inflammatory properties. In xylene and formalin-induced inflammation, saffron petal extracts, both aqueous and ethanolic, demonstrate anti-inflammatory and radical scavenging properties [37].

5. The local tribal people have been using karvi (Acanthaceae), another Indian medicinal herb that is widely available in the state of Maharashtra, to treat inflammatory conditions.[38]

6. In Indian Ayurvedic medicine, Euphorbiaceae roots are also used to treat gastritis, arthritis, and rheumatism [39]. When alcoholic extract was given orally to wistar rats at several doses, no toxicity was seen; additionally, glutathione peroxidase and superoxide dismutase activities were reported to be increased, suggesting the scavenging of free radicals [40].

1. Hypertension

High blood pressure, also known as hypertension [1-16, 46-64], is a very common and dangerous illness that can cause or exacerbate a number of health issues. Blood pressure and the risk of cardiovascular disease and death are directly connected. There is a direct correlation between blood pressure and the risk of stroke, MI, angina, heart failure, renal failure, or early death from cardiovascular causes. The reason hypertension is frequently referred to as "the silent killer" is that, until major issues arise, it usually shows no signs. Three broad categories of hypertension exist. When the cause of hypertension is unknown, it is referred to as essential or primary hypertension. Although there is no treatment for this type of hypertension, it can be managed. Essential hypertension affects about 90% of people with hypertension. Essential hypertension may occur as a result of a genetic component. Secondary hypertension is the term used to describe hypertension brought on by another illness or condition. Secondary hypertension, in which a co-morbid condition or medication causes blood pressure to rise, affects less than 10% of individuals. The most frequent secondary cause in the majority of these instances is renal dysfunction brought on by severe chronic kidney disease or renovascular disease. There are numerous causes of hypertension. As people age, their blood pressure usually tends to increase. Other illnesses including thyroid disorders or chronic renal disease might also result in hypertension. Oral contraceptives, over-the-counter cold remedies, and other hormone therapies can all cause hypertension as a side effect. There may be a hereditary component to essential hypertension. Hypertension caused by another disease or condition is referred to as secondary hypertension. Less than 10% of people have secondary hypertension, which is when a co-occurring illness or medication raises blood pressure. In most of these cases, renal failure resulting from severe chronic kidney disease or renovascular disease is the most common secondary aetiology. The reasons of hypertension are several. People's blood pressure often tends to rise with age. Hypertension may also be caused by other conditions, such as thyroid issues or chronic renal failure. Hypertension can be a side effect of hormone therapy, over-the-counter cold medicines, and oral contraceptives.

Hypertension is also influenced by lifestyle choices, genetics, and obesity. Depending on a person's age, underlying cause, medical history, blood pressure level, existence of problems, and overall health, symptoms may vary from person to person when they do develop. For additional details on signs and consequences, see symptoms of hypertension. A thorough evaluation comprising a medical history, physical examination, and multiple blood pressure readings is necessary to diagnose hypertension. The most significant clinical blood pressure metric for the majority of patients is systolic blood pressure, which is a better indicator of cardiovascular

disorders than diastolic blood pressure in individuals aged 50 and above. Isolated systolic hypertension is present in patients with a diastolic blood pressure reading below 90 mmHg and a systolic blood pressure reading of at least 140 mmHg. An 80/120 mmHg value is considered "normal" by many. As a matter of fact, there are numerous varieties of normal that rely on various criteria. Adults should generally maintain blood pressure levels below 140/90 mmHg. Furthermore, regular readings above 120/80 mmHg are now regarded by guidelines as pre-hypertension, a condition that needs to be watched for and treated to prevent blood pressure from steadily rising. Since there are typically no symptoms in the early stages of hypertension, it is highly conceivable that a diagnosis could be overlooked or postponed. When patients follow a solid treatment plan, their blood pressure usually returns to normal and problems are reduced.

The size of your heart is about the same as that of your closed fist. The heart rests close to the thoracic cavity's midline on the diaphragm. It is located in the mediastinum, a mass of tissue that runs between the lungs from the sternum to the spinal column.The double-walled layer that surrounds the human heart is known as the pericardium. The heart is surrounded and shielded by a membrane called the pericardium. It allows the heart to move freely enough to contract vigorously and quickly while confining it to its location in the mediastinum. There are two components to the pericardiums: the serous pericardium and the fibrous pericardium. The dense, uneven, tough connective tissue that makes up the superficial fibrous pericardium is inelastic. The fibrous pericardiums protect the heart by preventing overstretching.

2. CASE:

During the work, 60 patients in all were observed. The majority of them suffered from hypertension and diabetes. A few people had fever and the typical cold. Additionally, TB was discovered. Three of the six patients admitted had food poisoning, two had diarrhoea, and one had jaundice.

A small percentage of patients had both diabetes and hypertension.

3. Patient illness history:

- Usually there was none, but patients were experiencing hazy vision and frequent urination prior to the disease's diagnosis.
- There seemed to be an increase in hunger and thirst.
- During a complete physical examination, some of them were diagnosed with the condition.
- Patients of this kind were typically well-educated.
- During surgery, some patients were diagnosed with the condition.
- The majority of them had no prior medication history.
- Some of them had family members with similar illnesses.
- Elderly patients with joint pain were found to have a vitamin B12 deficit.
- The elderly patient also experienced back ache.
- There are no injuries on the body.

4. Physical examination:

- The follow-up patients were fit and healthy based on a general examination.
- A patient with hypertension had a high pulse rate.
- Blood pressure: elevated in a patient with hypertension Respiration: 12 breaths per minute (varies in patients with lung illness)

- CVS: Abnormal S1 and S2 sounds in patients with cardiac disease
- CNS: No functional neurological problem.
- The doctor performed an electrocardiogram (ECG) to diagnose the illness.

5. Laboratory investigation

Urine:

1. Physical examination:

Sr. No.	Test	Result
1	Colour	Pale yellow
2	Blood	Absent

2. Chemical examination:

Sr. No.	Test	Result
1	Protein	Absent
2	Glucose	Occasionally
3	Ketone	Absent
4	Bile salts	Absent
5	Bile pigments	Absent
6	Reaction	Acidic

3. Microscopic examination:

Sr. No.	Test	Result
1	Pus cell	0-2 / hpf.
2	Red cell	2-4 / hpf.
3	Epithelial cell	Occasionally / hpf.
4	Bacteria	Absent

Blood:

Sr. No.	Test	Normal Range
1	Hemoglobin	12-16 g/dl
2	Total RBC count	4.2-5.4 mill/cmm
3	Total WBC count	4000-10000 /cmm
4	Platelet count	150000-450000 /cmm
5	Random blood glucose	70-140 mg/dl
6	Serum creatinine	Male: 0.7-1.4 mg/dl Female: 0.5-1.2 mg/dl

Lipid profile:

Sr. No.	Test	Normal Range
1	Cholesterol total	<200 mg/dl
2	Triglycerides	<150 mg/dl
3	HDL Cholesterol	>60 mg/dl
4	Non-HDL Cholesterol	<130 mg/dl
5	LDL Cholesterol	<100 mg/dl
6	CHOL/HDL ratio	3.5-5 mg/dl
7	VLDL Cholesterol	6-38 mg/dl

Report:

- Urine can occasionally include glucose.
- Every other urine test is normal.
- Urine occasionally contains epithelial cells.
- Blood glucose levels are randomly greater than normal.
- WBC is occasionally shown to be higher than usual.
- A high lipid profile was noted.

6. Provisional diagnosis:

- Elevated blood pressure Ankle
- Other body inflammation
- Headache
- Blurred eyesight
- Rambling speech

7. Assessment:

1. Diagnosis:

- Type I and type II diabete
- Hypertension
- Vitamin deficiency-related leg discomfort

2. The purpose of treatment is to:

- Prevent or postpone the onset of late disease complications
- Prevent cardiovascular damage
- Maintain a high quality of life.

3. Therapy is required:

- The patient should be treated to achieve systolic and diastolic blood pressure targets of 140 mmHg and less than 90 mmHg.

4. Evaluation of treatment: medication given to the patient

a) Pioglitazone:

- Class of drug:Thiozolidinediones
- Managing blood sugar levels in individuals with type II diabetes is the indication.
- Side effects include shortness of breath, sore throat, and elevated cholesterol.
- Name of brand: Pioz MF G1

b) Metformin hcl:

- Class of drug: biguanides Blood sugar control in individuals with type II diabetes is the indication.
- Headache and lightheadedness are possible side effects.
- Name of brand: Pioz MF G1

c) Glimepiride:

- Sulfonylureas are the drug class
- Indication: It causes your body's natural insulin to be released, which decreases blood sugar.
- Name brand: Pioz MF G1

d) Telmisartan:

- Brand name: Cortel Trio
- Drug class: Angiotensin receptor blockers
- Indication: To treat high blood pressure
- Side effect: Some patients experienced dry cough

e) Amlodipine:

- Generic name: Cortel trio
- Classification: calcium channel blocker
- Indication: Reduces blood pressure

f) Rosuvastatin:

- Name: Roseday a 10
- Class of drug: HMG-CoA reductase inhibitor
- Indication: lower cholesterol

g) Aspirin

- Classification of drug: non-steroidal anti-inflammatory medicines
- Indication: decrease of cardiovascular risk
- Brand name: Roseday a 10

h) Rabeprazole:

- Medicated to lessen acid production that can cause gastritis
- Generic name: Rabekind 20
- Drug class: proton pump inhibitor
- Indication: lessen ulcer formation

i) Methylcobalamin:

- Classification of drug: Vitamin B12
- Indication: Restoring vitamin B12 insufficiency
- Brand name: Nervigen

j) Fexofenadine:

- Class of drug: antihistamine
- Reduction of allergic symptoms is the indication.
- Name of brand: Torkast-FX

k) Montelukast:

- Classification of drug: Leukotriene receptor antagonist
- Use: Reduces rhinitis and asthma symptoms
- Brand name: Torkast-FX

l) Teneligliptin:

- Classification: Anti-diabetic medications known as gliptin
- Use: to treat diabetes
- Name: Teniva 20

m) Chlorthalidone:

- Drug class: Diuretics
- Indications: heart disease and excessive blood pressure. (Decrease excess salt in the body brought on by illnesses like heart disease.)
- Brand name: CTD 12.5

o) Bisoprolol:

- Brand name: Concor AM 5
- Class of drug: beta blocker
- Indication: To treat hypertension

p) Cefixime:

- Drug class: antibiotic cephalosporin
- Indication: to treat a broad range of antibiotics
- Name of brand: Hifen 200 dt

P) Paracetamol:

- Classification of drug: Analgesic and antipyretic
- Use: Pain relief and fever reduction
- Brand name: Dolo 650

8. Reason for the therapy:

- ✓ Type II diabetes mellitus is mostly treated with thiozolidinediones and biguanides.
- ✓ Telmisartan and amlodipine are frequently used as first-line treatments for hypertension.
- ✓ In certain situations, cefixime and paracetamol are used to treat viral fever that is brought on by a change in location or weather.
- ✓ In few instances, the use of Telmisartan resulted in side effects such dry cough. To lessen coughing, fexofenadine and montelukast were administered.
- ✓ Because of the observed side effects, bisoprolol was administered instead of telmisartan.
- ✓ If necessary, paracetamol is used to relieve fever or headaches.

9. Monitoring:

- ✓ Monitoring of adverse medication reactions.
- ✓ The primary diagnosis involves monitoring the blood sugar level.
- ✓ At the onset of treatment, blood pressure was measured.
- ✓ Any adverse effects brought on by prescription medications are tracked.

10. Advice given to patient:

- ✓ Always take the medication as prescribed by your doctor.
- ✓ Perform the exercise as instructed.

- ✓ Get enough sleep to help lower your blood pressure.
- ✓ Avoid eating foods that contain salt.
- ✓ Eat less or avoid sweating.
- ✓ Sweat might raise blood sugar levels.
- ✓ Make an effort to maintain a healthy body weight.
- ✓ Consume foods high in calcium and vitamins.
- ✓ Regular doctor's appointments and lab tests are conducted.

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