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Diploma in Pharmacy 2nd Year
Pharmacotherapeutics
Experiment

To Provide Counselling to Patient on Tuberculosis Disease Condition, Medications, Life-Style Modifications, Monitoring Parameters.

Aim:

To Provide Counselling to Patient on Tuberculosis Disease Condition, Medications, Life-Style Modifications, Monitoring Parameters

Reference :

‘ Dr. Gupta G.D. , Dr. Sharma Shailesh, Dr. Sharma Rahul Kumar, “Practical Manual of Pharmacotherapeutics” Published by Nirali Prakashan, Page no 81 - 84

Theory :

Tuberculosis :

Tuberculosis (TB) is primarily seen in the lungs (pulmonary tuberculosis), but the germ can also spread to other areas of the body (extrapulmonary tuberculosis) and can sometimes be found in numerous body parts (military or disseminated TB)

Patients must be informed about tuberculosis, how the disease spreads, signs and symptoms, consequences of not following the treatment guidelines, why treatment is long, why completion of treatment is vital, likely adverse events during therapy, cost of treatment, and what free/public services are offered to the patients during counseling.

Respiratory Isolation and Use of Masks

1) It is critical for the patient to remain in home isolation. He/she should stay as far away from other people in the house as possible, either by staying in a separate room or by wearing a surgical mask while going outside If feasible, separate bedrooms or beds are highly advised. The patient is restricted to travel, attend work, school, shop, or engage in any other activity that requires interaction with others.
2) When coughing or sneezing, the patient should use a tissue to cover his/her mouth and nose Before disposal, these tissues should be flushed, incinerated, or wrapped in a leak-proof bag.
3) The patient is restricted to leave house, except for medical appointments. To the clinic and doctor's offices, he/she should wear a surgical mask.
4) The patient should not allow anyone inside the house, except those living with him/her or those providing care, and should avoid interacting with young children.
5) Isolation orders should be in force until the patient is advised by the health department that he/she no longer needs to be isolated.
6) If the clinical condition changes, these isolation requirements may become effective again after the patient has been notified that he/she is no longer contagious.
7) Doors and windows should be kept open as much as possible.
8) OT (Directly Observed Therapy) visits should take place outside, near open windows, and as quickly as possible to minimise exposure duration.
9) During the period the patient is considered contagious, the DOT worker should wear a N95 mask.
10) Sputum specimens should be collected outside When collecting sputum, the DOT worker should use a N95 mask

Importance of Chemotherapy as Prescribed

1) Having tuberculosis should not prevent a person from living a normal life Patients with tuberculosis can resume their normal activities after they are no longer infectious. The medication has no effect on strength, sexual function, or work ability. If the TB drug is taken exactly as prescribed, it will destroy the TB bacteria and prevent the patient from getting sick again.
2) Because there are so many TB germs to kill, it is important to take multiple different TB treatments. The TB germs will not get resistant to the therapy if three to four different TB medications are ingested.
3) Isoniazid, Rifampin, Pyrazinamide, and Ethambutol are the most commonly prescribed drugs.
4) For the first 2 months, the patient will often take numerous tablets of four different drugs daily (M-F). The patient may thereafter be able to take a few tablets of just two drugs twice a week until the treatment is finished (another 4-7 months).
5) If a patient follows the treatment plan of multiple unique medications for 6-9 months, TB is virtually invariably cured. For the length of treatment, the drug must be taken constantly and without interruption.
6) The treatment takes so long because tuberculosis germs grow slowly and die slowly. In less than a year, the combination of these drugs supplied through DOT can cure the condition.

Other Warnings to Tell Clients taking TB Medications

1) If taking TB medicine, the patient should try to stay away from alcohol as it may cause liver damage.
2) The patient should inform the pharmacist if taking any additional medications as certain prescription medicines may interact with TB medication.

3) The patient should inform the pharmacist of any issues.

Directly Observed Therapy (DOT)

1) Although most tuberculosis patients begin to feel better after only a few weeks of treatment, the TB germs remain active in the body.
2) It is extremely harmful for a TB patient to cease taking medicine too soon or not at all. The TB bacteria begin to proliferate again, and patients may get infected and unwell for a longer period of time.
3) It is extremely harmful for a TB patient to cease taking medicine too soon or not at all. The TB bacteria begin to proliferate again, and patients may get infected and unwell for a longer period of time.
4) DOT aids in the prevention of these issues by ensuring that therapy is completed.

Importance of Regular Medical Assessments

1) It is critical to visit the clinic at least once a month for regular check-ups.
2) Blood tests can be performed to ensure that the drugs are not causing liver damage.
3) Chest X-rays may be taken to see if the condition has improved.
4) Sputum tests will be performed to check that the drugs are effective. The test results also aid in determining whether a patient is no longer infectious and can resume normal life.

Side Effects and Adverse Drug Reactions

The things that are expected to happen in persons who take particular medications are known as side effects. The majority of adverse effects are treatable and do not necessitate discontinuing the medicine.

Medications	Side Effects	Actions
Isoniazid	Tingling/numbness around the mouth or in extremities; dizziness Gl discomfort, nausea upon taking the medications, but it improves later in the day.	B6 should be administered prophylactically, any mild signs or symptoms should be reported to the nurse or physician The time of when medicines are ingested should be changed; medicines should be given with a little snack or food; and the nurse or physician should be notified.
Rifampin	Bodily fluids, such as urine, sweat, or tears, can turn orange or reddish in colour. Drug interactions can affect the effectiveness of methadone, and can conflict with birth control pills or implants. Sensitivity 10 sunburns sun; occurring frequently Bruising is easy, and blood clotting is delayed	The patient should be prepared to notice this by having him/her switch to hard contact lenses or glasses, as soft contact lenses can stain. When rifampin is prescribed, the patient should be advised to use an alternative or backup method of birth control (e.g., copper-bearing IUDs like ParaGard, condoms, diaphragm) because it reduces the effectiveness (to varying degrees) of combined oral contraceptives, progestin- only oral contraceptives, levonorgestrel implants, Depo-Provera, patch, and ring Use of a condom should be advised as a backup. The pharmacist and physician should be aware of the patient's current medications. The patient should be advised to avoid prolonged sun exposure and to use proper sun protection.

	Gl discomfort nausea when taking medications, improves later Aches in joints	Bruising should be avoided; aspirin should not be taken unless the doctor instructs. and the doctor should be informed about any medications taken before any treatment that could cause bleeding. The time of when medicines are ingested the should be changed, medicines should be but given with a little snack or food; and the in the day nurse or physician should be notified The pharmacist or physician should be informed if using cold or heat packs.
Ethambutol	Can produce impaired or altered vision, as well as colour vision problems.	Eyes should be checked and tested once a month

Adverse medication reactions are serious adverse effects of medications that require the patient to cease taking them to prevent danger or damage.

Medications	Adverse Reactions	Actions
Isoniazid	Tingling/numbness around the mouth or in extremities, dizziness	The patient should be advised to stop taking the medicine if the condition is severe or appears to be getting worse, and contact the pharmacist or a doctor.
	Hepatitis symptoms include nausea, vomiting, yellowing of skin or eyes, stomach pain, dark, maple syrup or coffee-coloured urine, abnormal liver function	Same as above

	tests, exhaustion, fever for more than 3 days, flu-like symptoms, and lack of appetite	
Rifampin	Bruising is casy, and blood clotting is delayed. Hepatitis symptoms (same as above)	Same as above Same as above
Pyrazinamide	Severe stomach distress, vomiting, and lack of appetite. Hepatitis symptoms (Same as above)	Same as above Same as above
Ethambutol	Any variations in vision should be documented.	Same as above

Life style Modifications

1) **Role of Diet:**
   i) The severity of infection gets worsen by malnutrition.
   ii) Nutritional status gets affected by chemotherapy.
   iii) A balanced diet is essential for boosting immunity and fighting against the disease
   iv) Consumption of nutrients such as proteins, minerals and vitamins should be increased.
   v) Balanced diet should be taken along with the drugs to fight against the disease

2) **2) Dietary Management:**
   i) Fruits should be consumed for three days. Three meals of fresh juicy fruits should be taken regularly at an interval of 5 hours.
   ii) A fruit and milk diet along with a cup of milk to each fruit meal should be consumed for further 10 days.

iii) A balanced vegetarian diet should be consumed after this.

iv) High carbohydrate, high protein, low fat, and high calcium foods that aren't greasy or spicy are among the principle of the diet

v) Tea, coffee, sugar, white flour and products made from them, refined foods, fried foods, flesh foods, alcohol and smoking should be avoided.

3) **Dietary Recommendations:**

i) Dietary Fat:

a) Less than 10% of calories from saturated fat and less than 300 mg/day of cholesterol as well as few trans-fats (hydrogenated fat) should be consumed.

b) Total intake of calories from fats/oils should be maintained at between 20-35%, with the majority of fat coming from polyunsaturated and monounsaturated sources such oily fish, nuts, and vegetable oil.

c) Lean, low-fat, or fat-free varieties of meat, poultry, dry beans, milk, and milk products should be selected.

ii) Carbohydrates:

a) Fibre-rich fruits, vegetables, and whole grains should be consumed as much as possible.

b) Foods and drinks with little added sugars or caloric sweeteners should be consumed.

iii) Protein:

a) Lean meats and poultry should be consumed.

b) A variety of protein rich foods, with more fish, beans, peas, nuts and seeds should be consumed.

c) Baked, broiled or grilled food should be consumed.

iv) Vitamins: Vitamin A, C, D should be consumed more.

Monitoring Parameters

1. Sputum should be examined for AFB smear and culture every month (until 2 repeated negative cultures).
2. Drug susceptibility testing should be done on initial positive culture.
3. X-ray of chest should be done at 2 month of initiation phase if initial negative cultures occurs or at end of treatment for culture negative TB.
4. Baseline serum creatinine, AST/ALT. bilirubın, alk phosphatase, platelets should be examined.
5. Visual acuity and colour vision should be examined every month if taking more than the prescribed mg/kg doses of EMB or if treatment is more than two months.

Result: Patient counselling on Tuberculosis disease condition, medications, life-style modifications, monitoring parameters was provided.

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