Nurse's role in Prevention and Control of Tuberculosis

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Tuberculosis is a chronic bacterial disease caused by "Mycobacterium tuberculosis". The usual spread is by inhalation of airborne organisms coughed or sneezed into the environment by person with active pulmonary TB. It may also be transmitted by drinking infected milk.

The dreadful disease affects about 50% of world's population. India is estimated to have 2.2 million cases of TB every year, and over 0.5 million die of this disease every year (19% of global TB deaths) i.e. more than 10,000 every day.

Considering the high mortality and morbidity rates of this disease, the role of nurse becomes crucial and manifold in various aspects both in the prevention and control.

Fundamental components:

The two important components of a national Tuberculosis programme are curative component which includes case finding and treatment and preventive component i.e. BCG vaccination.

Role of the nurse

Under the Revised National Tuberculosis Control Programme (RNTCP) a nurse can contribute by:

- Case finding through organized home visits and helping the patients to get continued treatment.

The case can be identified by sign and symptoms i.e. Persistent cough for 3-4 weeks, continuous fever chest pain, and haemoptysis.

Ensuring that patients bring sputum (morning specimen) in specimen bottle for testing. Referring for sputum microscopy in quality clinics by senior Lab. Technicians. (Chemotherapy is recommended for active cases).

Patient must take the correct drugs at the correct dosage for the correct length of time. Directly Observed Treatment Short Course (DOTS) chemotherapy is a strategy that ensures patient compliance. Supervising patients on Short Course chemotherapy or DOTS or other regimens is the responsibility of nurse. In DOTS there is the "intensive phase" in which the health worker or public nurse watches as the patient swallows the drug in his/her presence. And in continuation phase for one week patient is given medications in a multiblister combipack. Here the first dose is taken in front of trained person. The rest of the doses are taken by the patient every alternate day and it is ensured that the patient returns the empty pack when he comes to take the stock of the next week.

The standard bi-weekly regimen is Injection Streptomycin 0.75 lams, Tab. INH 600-700 mg, Tab. Pyridoxine 10 mg. The physician recommends the dose and duration of treatment according to the severity of the condition.

Drug resistance and prevention

Patients who withdraw the treatment in between are at risk, to develop drug resistance, which becomes difficult to treat.

A nurse plays an active part when she identifies such cases and ensures complete treatment. This is possible by consulting physician and helping patient take two or more drugs in combination and those drugs to which bacteria are sensitive. Doing regular follow up so that treatment is complete, adequate and regular.

Hospitalization is indicated for patients who have massive haemoptysis, pneumothorax, meningeval tuberculosis.

An open case of TB can infect as many as 15 people in one year. Tuberculosis isolation is recommended for patients with positive sputum smear or chest film that is strongly suggestive of active TB.

A patient with active Pulmonary TB is prevented from contaminating air with tubercle bacilli by several means. The nurse must provide effective education. Covering nose and mouth decreases the likelihood of atomized secretions becoming air-born. Generally a patient should be required to submit to the continual discomfort of masks only when he leaves the room or if high transmitter when hospital personnel or visitors are in the room. Whether at home or in hospital sputum should be expectorated into tissues or a covered sputum container and discarded after disinfection in toilet or collected in a paper bag to burn. In TB hospitals sputum is disinfected by boiling or autoclaving for 20 minutes at 20 lbs pressure. Alterna-
tively the patient may be made to spit in a sputum mug, half filled with 5% Cresol. When cup is full, it is allowed to stand for one hour, then contents can be flushed in toilet.

BCG vaccination confers god protection. This must be given to newborn infants, house hold contacts of active case and high risk groups. People who are at risk of contacting active disease for e.g. children, elderly HIV + cases, persons on prolonged steroid treatment may be referred to health facility for check-ups. Routine X-ray exam of patients in general and mental hospitals who are at risk should be done. People working in industries and mines need to avoid exposure to excessive amounts of silicon dioxide which is harmful for lungs. People migrating to other countries should be screened for TB before migrating. Dairy animals may be tested and infected ones must be slaughtered. Milk must be pasteurized.

A nurse has a vital role in the community. Recognition of new cases and intense search for hidden cases is an important responsibility. According to Swaminathan N. et al. the concept of student volunteers has evolved. College and school children can be trained to create awareness about disease in their localities. School children can be as DOTS providers to cases after confirmation of the disease.

**General Health Measures**

- Avoid over crowded areas, dusty areas and ensure ventilation of rooms. Brisk walking and deep breathing exercises in the open, twice a day.
- Proper diet-cheap and easily available product groundnuts, chana, jaggery, green vegetables and fruits must be taken to boost up immunity.
- Covering the nose and mouth while talking, coughing and sneezing and avoiding spitting on roads.
- Wash hands very carefully after any contact with body substances, masks or soiled napkins.
- Sputum is highly contagious, patient should cough in tissue paper or cloth which should be burned every day after collection from closed waste bin.
- The nurse can be provided by educating patient about the meaning of this disease today.

**References:**


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**Workshops on “Update of Supervisory skills for Nurse Managers”**: The School of Nursing of the Himalayan Institute Hospital Trust (HIHIT) in Dehra Dun held two workshops entitled “Update of Supervisory Skills for Nurse Managers” from February 23 to February 26, 2004. Mrs. O.K. Kathuria, retired senior faculty of RAK College of Nursing was the chief guest, lecturer, and consultant. The major purpose of the workshops was to prepare nursing faculty and nurse managers from the HIHIT to embark on the implementation of a “Collaboration Model” that formally joins nursing education with nursing service.