Case Study Of Tuberculosis

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ABSTRACT: Tuberculosis is one of the most serious threats to the people these days. It is highly contagious, which usually attack lungs and spreads to other parts of the body like kidney, brain, and spine. It is caused by Mycobacterium tuberculosis bacteria. The best treatment option is done by calculating correct dose according to the patient's body weight. Here is a case study of tuberculosis showing error in dose calculation so optimized dose according to the patient's body weight must be prescribed for effective treatment of tuberculosis.

KEYWORDS: Tuberculosis, Antitubercular drugs, medication errors.

INTRODUCTION: Tuberculosis is an infectious disease caused by Mycobacterium tuberculosis which is an aerobic bacteria. Regardless of well regulated treatment guidelines we see many medicational errors with antitubercular drugs which are categorized as drug interactions, dosing errors, drug toxicity, etc. Dosing errors especially related with weight based dosing is most common type in current clinical practicing. Therefore greater alertness is much needed while prescribing Antitubercular medication.

CASE REPORT:

CASE:

A male patient of age 55years was admitted at a local hospital having chief complaints of fever, cough, and weakness since 15 days. Physical examination and vitals include- body weight-70 kg, body temperature-100F, Blood Pressure-90/70 mmHg, Pulse Rate-87 beats/min, Respiratory rate- 19 breath/min.

Laboratory Tests includes- serum creatinine-1.2mg/dl, blood urea-39mg/dl, total bilirubin-0.5mg/dl, direct bilirubin-0.2mg/dl, alkaline phosphate-94U/L, X-ray showing upperlobe opacities, Acid-fast bacillus test was positive. The final diagnosis was made as Tuberculosis. Treatment includes intravenous fluids (IV)-DNS, Injection cefotaxime (third generation cephalosporin) of dose-1gm given through IV route twice daily, Injection PAN (first generation proton pump inhibitor) 40mg, IV, once daily Tablet DOLO (paracetamol, antipyretic, analgesic)650mg,thrice daily-per oral, syrup dextromethorphan(antitussive)10ml,thricedaily-per oral ,tablet forecox-2 tablets twice daily-per oral(one tablet contains isoniazid-150mg, rifampicin-225mg, ethambutol-400mg, pyrazinamide-750mg) but for antitubercular drugs the dose is calculated based on body weight in this case the body weight of patient is 70kg so the correct dose must range between

Isoniazid-280 to 420mg, rifampicin-560 to 840mg, pyrizinamide-1400 to 2100mg, ethambutol-1050 to 1400mg. Here we can see dosing error, proper dose based on body weight is more effective in treating tuberculosis.

DISCUSSION:

Tuberculosis is a potentially serious infectious bacterial disease that mainly affects lungs. Treatment for tuberculosis is done by calculating dose according to the patient's body weight. In this case patient's body weight was 70kg according to his body weight the correct dose must range between Isoniazid-280 to 420mg, rifampicin-560 to 840mg, pyrazinamide-1400 to 2100mg, ethambutol-1050 to 1400mg but the dose prescribed were isoniazid-300mg/day, rifampicin-450mg/day, pyrazinamide-800mg/day,ethambutol-1500mg/day so the doses must be properly calculated in effective treatment of tuberculosis.

Drug	Dose
Rifampicin	8-12mg/kg once daily
Isoniazide	4-6mg/kg once daily
Pyrazenamide	20-30mg/kg once daily
Ethambutol	15-25mg/kg once daily

CONCLUSION:

Despite of having well regulated treatment, dosing errors are the most common errors these days. Proper understanding, calculating doses and providing patient specific dose is required for treating tuberculosis to prevent such medication errors.

ABBREVATIONS:

TB: Tuberculosis

IV: Intravenous

NS: Normal saline

DNS: Dextrose normal saline

CONFLICTS OF INTERESTS:

Declared none

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