

IRRATIONAL THERAPEUTIC MANAGEMENT OF A YOUNG BOY ADMITTED IN A LOCAL HOSPITAL OF ISLAMABAD, PAKISTAN; A CASE REPORT


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ABSTRACT: The goal of drug therapy is the achievement of therapeutic outcomes without any unwanted risk or harm to the patient. Despite of the fact that various advancements have been made for the improvements of healthcare system but still many risks exist that in turn harm the patients. Among these risks one of most important is the risk of medication error. A 14 years old boy was admitted to a hospital with chief complaints of loss of appetite, shortness of breath, vomiting, abdominal pain, accumulation of fluid in the peritoneal cavity (ascites) and obstructed defecation. Important tests like ultrasound, chest x-rays, renal and hepatic profile were performed. Ascetic fluid analysis was also carried out. But prior to any final diagnoses and test reports physician prescribed him Myrin P Forte (Isoniazid 75 mg, Ethambutol 275 mg, pyrazinamide 400 mg, rifampin 150 mg) OD (once a day), Isoniazid 100 mg OD (once a day), Tab Vita 6 (pyridoxine) 800 mg OD(Once in a day), injection D/S 500 ml I/V BID (two times a day), injection leflox (levofloxacin) 500 mg I/V TDS (three times a day), injection maxolon (metoclopramide) I/V BID(two times a day),injection flagyl (metronidazole) 500 mg I/V TDS(three times a day), injection risk (omeprazole) 40 mg I/V OD (once a day), and syrup Hydrillin 2 tsp. TDS (three times a day) as empirical therapy. His physical examination showed jaundice, edema and dehydration. Vital signs were heart rate 52 beats/minute, Respiratory rate 9 breaths/minute and fever 101°F. All these medications led to drastic harmful effects and medication errors that deteriorated the condition of patient. There is need of reporting and evaluating system to avoid health related hazards due to medication errors.

Key words: Irrational prescribing; Empirical therapy; Drug induced hepatotoxicity; improper disease management; Medication error reporting system

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INTRODUCTION

Drug use is a complex process and there are many drug related challenges at various levels, involving prescriber, pharmacists and patients. While medication misadventure can occur anywhere in the health care system from prescriber to dispenser to administration and finally to patient use, the simple truth is that many errors are preventable, and pharmacists assume active role in appropriate use of drugs. Pharmacy entails a health science specialty which embodies the knowledge of pharmacology, toxicology, pharmacokinetics and therapeutics for the care of patients (Vijay Roy et al, 2005).

A medication error is a preventable event that may cause or lead to inappropriate medication use or patient while the medication is in the control of the health care professional, patient, or consumer. Such events may be related to professional practice, health care products, producers and systems, including prescribing; order communication; product labeling packaging and nomenclature; compounding; dispensing; distribution; administration; education; monitoring; and use (NCC-MERP-2015). So it may be committed by both medical and non-medical personnel. Errors usually occur from lack of knowledge, ignorance or negligence and inadequate system.

Estimates show that in developed countries as many as one in 10 patients is harmed while receiving hospital care (Bates D 2010). About 44,000 and 98,000 people die each year as a result of all types of medical errors (MEAT: 2003). It is acknowledged that children are at the greatest risk for MEs. A systematic review of published research on MEs in children found, as with studies on adults, that the definition of ME was non-uniform across the studies (Miller MR et al, 2007).

CASE REPORT

A 14 year old boy was presented to a government hospital of Islamabad, Pakistan. The chief complaints were loss of appetite (25days), vomiting (20days), abdominal pain (20days), shortness of breath(5days), accumulation of fluid in the peritoneal cavity(ascites)(1day) and obstructed defecation(1day).The ultimate decision after examination was to admit him in medical ward.

Primary treatment was started as empirical therapy with Myrin P Forte (Isoniazid 75mg, Ethambutol 275mg, pyrazinamide 400mg, rifampin 150mg) OD (once a day), Isoniazid 100mg OD(once a day), Tab Vita 6 (pyridoxine)800mg OD(Once in a day), injection D/S 500ml I/V BID (two times a day), injection leflox (levofloxacin) 500mg I/VTDS(three times a day), injection maxolon (metoclopramide) I/V BID (two times a day),injection flagyl (metronidazole) 500mg I/V TDS (three times a day), injection risk (omeprazole) 40mg I/V OD (once a day), and syrup Hydrillin 2 tsp. TDS (three times a day) as empirical therapy. His physical examination showed jaundice, edema and dehydration. Vital signs were Heart rate 52beats/minute, Respiratory rate 9 breaths/minute and fever 101°F. His tests reports were collected and examined in period of 2 days after the initial therapy. Abdominal ultrasound showed coarse hepatic parenchyma (drug induced), gross ascites with bilateral pleural effusion .Ascetic fluid analysis showed moderately blood stain fluid with turbidity, sediment and small coagulum. Renal function tests showed creatinine 1.8mg/dl (0.6-1.2 mg/dl) urea 132mg/dl (5-20 mg/dl), and uric acid 20.5mg/dl (3.4-7.2 mg/dl). No bacteria or acid fast bacilli were seen in smear culture. Neutrophils level was elevated up to 65%, WBCs count was also elevated 61500cells/mcl. Considering renal profile of that patient dose adjustment of prescribed antibiotic (Levofloxacin) was not done. Afterward worsened as cites was treated via suction and antitubercular agents were stopped while antibiotics were continued till discharge.

This case report intends to highlight irrational treatment as doses of medication (levofloxacin) was not adjusted for this patient and even some of the drugs were prescribed without indication (Myrin-P) which have potential of inducing hepatotoxicity. Some unnoticed drug interactions were also found.

DISCUSSION

Irrational use of medicines is a widespread problem at all levels of health care, but especially in hospitals. This is particularly worrying as resources are generally scarce and prescribers in communities often copy hospital prescribing practices. Use of medicines can be greatly improved and wastage reduced if some simple principles of drug management are followed (WHO: 2014).

Patient was not suffering from tuberculosis. First line anti-tubercular agents should not be given as empirical therapy at all because of its stronger hepatotoxicity. The most frequent adverse effects of anti-tuberculosis medications are hepatotoxicity, skin reactions, gastrointestinal and neurological disorders. Hepatotoxicity is the most serious one and is the focus of the present review (Frieden TR et al, 2003). As patient renal function was impaired hence Myrin P Forte dose was large enough to cause hepatotoxicity in this patient. Levofloxacin is also reported to cause potential life threatening hepatic failure so its dose should be half than initial dose (BNF: 2014). Adverse effects diminish treatment effectiveness, because they significantly contribute to non-adherence, eventually contributing to treatment failure, relapse or the emergence of drug-resistance (Kaona FA et al, 2004).Drugs are mostly eliminated mostly by kidney, so re-evaluate need for drug. As patient was also renally compromised so dose adjustment of levofloxacin was necessary but this condition was left untreated which further deteriorated his condition. Many antimicrobial agents are eliminated renally and require dosing adjustments in patients with renal impairment (Livornese LL Jr et al, 2004). Renal function and drug concentrations should be monitored and dosages adjusted accordingly. Sodium restriction and spironolactone 100mg daily proved to be effective for edema management (BNF: 2014). But no diuretic was prescribed to this patient in order to treat his condition.

CONCLUSION

Medication errors should be prevented by adopting effective policies and procedures, there should be collaboration between physician, pharmacist and nurses. By combine efforts of health care professionals whole scenario should be changed so that in future no more deaths or harmful effects occur. As medication errors not only jeopardize patients' health but also increase economic burden. So the adequate awareness regarding pharmacological effects and dosage of prescribed drugs among physicians or other health care professionals is extremely important.

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