

MEDICATION ERRORS IN PNEUMONIA THERAPY OF AN INFANT ADMITTED IN A LOCAL HOSPITAL OF RAWALPINDI, PAKISTAN; A CASE REPORT

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Summary

Medication errors are emerging cause of severe adverse effects and consequently deaths. They include prescribing errors, dispensing errors, medication administration errors and patient compliance errors. Despite of the extensive awareness regarding safe drug use and improved clinical facilities, such kind of errors are still occurring in clinical settings all over the world. Many medication errors remain undetected. Thus this case study aimed to highlight the extreme needs of medication errors reporting system so that correction can be made as soon as possible, before the occurrence of serious damage or severe adverse effects that appear sooner or later in patient's life. A three month old baby (boy) was presented in a hospital with cough, breathing difficulty and poor feeding. The physician prescribed him injection Grasil (amikacin sulphate) 40mg IV (intravenous) BID (two times in a day), injection Solucortef (hydrocortisone) 50mg IV x stat, injection Rocephin (ceftriaxone) 1500mg OD (once a day), injection Klaricid (clarithromycin) 60mg BID (two times in a day), injection Lasix (furosemide) 50mg x IV TDS (three times in a day), ventolin (salbutamol) nabulization (0.25cc x 1cc normal saline), injection Diazepam 0.5 ml (2.5 mg) OD, Inj. Phenobarbital 12.5mg x IM (intra muscular) BID, injection pears solution (115ml) IV x TDS. Chest X-ray and Complete Blood Count were also carried out. Vital signs showed fever of 100°F, respiratory rate 94 breaths/minute, heart rate 150 beats/ minute, eventually his symptoms were settled and he discharged from hospital. Certain medication errors, mainly prescribing errors were observed that could be avoided if patient care was provided with proper consultation or better awareness. In order to avoid serious health related issues, error reporting system need to be encouraged in clinical settings or hospitals.

Key Words: Pneumonia patient, medication errors, health related issues, error reporting system.

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Introduction

Medication error is any preventable event that can lead to the serious outcomes with respect to health and patient well being. It may be committed by both medical and non medical personnels. Errors usually occur from lack of knowledge, ignorance or negligence and inadequate system.

Medication error is a major problem of both developed and under developed countries. In the United States, it has been considered as a major killer [1]. Medication errors include prescribing errors, dispensing error, medication administration errors, and patient compliance [2]. The prescribing stage is the most crucial and error-susceptible stage as compared with administration, dispensing, and other stages [3]. Hospitalized patients are exposed to poly pharmacy often involving potentially harmful drugs. With the advent of large no drugs in clinical field, super specialization of clinicians is increasing where as clinician's knowledge and experience regarding prescribed drugs is decreasing [4].

About 44,000 and 98,000 people die each year as a result of all types of medical errors [5]. A well-established and well known definition of prescribing errors in general practice is non-existent for Pakistan hospitals. Similarly in UK, the definition of prescribing error reached consensus recently in 2000, while a consensus on prescribing errors in pediatric practice was reached in 2005 [6,7]. However, recent study highlights the fact that medication errors are also a major problem in the pediatric population. Pediatric medication errors include, improper pediatric formulation, inadequate communication between health professionals, dose calculation mistakes etc [8].

Case Report

A three months old baby (boy) was presented to a general hospital of Rawal pindi, Pakistan. The chief complaints were cough (for 4 days), breathing difficulty (for 2 days) and poor feeding (for 2 days). He was alright five days back when he developed conjunctivitis in eyes (both) along with nasal blockage, cough started four days back which was moderate in intensity occurring at any time, associated with vomiting. The plan was to admit him in Peads ICU.

The primary treatment he was provided with included Inj. Diazepam 0.5ml (2.5mg) OD, Inj. Lasix (furosemide) 10mg IV x stat, Inj. Grasil (amikacin) 40mg IV x BID, Inj. Solu cortef (hydrocortisone) 50mg IV x stat, Ca-glucuronide 3.5ml (in equal dilution) IV x TDS. His vitals were checked, his respiration rate was 94 breaths/ minute, Heart rate was 150 beats/ minutes, temperature was 100°F. On basis of his condition and response to primary treatment, the secondary treatment was provided, included Inj. Rocephin 1500mg OD, Inj. Klaricid 60mg x BID, Inj. Solu Cortef 70mg IV QID, Inj. Phenobarbital IM 12.5mg BID, Inj. Lasix 50mg x IV TID, Ventolin (0.25 cc x 1cc Normal saline) nebulization, Inj. Peads solution (115ml) IV TID. This treatment continued until his discharge from hospital.

The above mentioned treatment was irrational as doses of certain drugs were incorrect and some unnoticed drug interactions were also found. The overdoses of hydrocortisone and furosemide were given. The excessive dose of hydrocortisone caused convulsions. In order to treat convulsions Phenobarbital was administered. As Phenobarbital induces cardiac depressant effects so Digoxin (dose not known) was administered to alleviate symptoms. The drug interactions were found between amikacin and furosemide, salbutamol and furosemide.

Discussion

The dose of hydrocortisone was found to be incorrect. It should not exceed 25mg in children less than 1 year [9]. Hydrocortisone is termed as corticosteroid. It cause growth related adverse effects on children [10, 11].The overdose of corticosteroids cause severe symptoms including convulsions [12].

Amikacin (aminoglycoside) and furosemide both are prone to cause ototoxicity and nephrotoxicity [13]. So concomitant administration of these two drugs should be avoided or dose adjustment is required. Moreover vestibular, audiogram and renal function test need to be performed to check their toxic effects.

Ventolin (salbutamol) and furosemide both cause hypokalemia [14,15]. Hence furosemide dose should be kept low to avoid hypokalemia. But in this case furosemide dose was increased from 10mg to 50mg TID (overdose) without considering its hypokalemic effect. Patient's potassium levels were not monitored in blood.

Conclusion

The complete awareness regarding pharmacological effects and dosage of prescribed drugs by the physician or other health care professionals is extremely important. Both individual as well as combined effort should be made to avoid medication mainly prescribing errors.

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