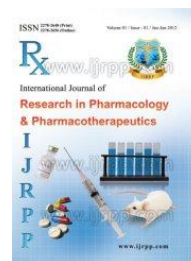




International Journal of Research in Pharmacology & Pharmacotherapeutics



ISSN Print: 2278-2648
ISSN Online: 2278-2656

IJRPP |Vol.4 | Issue 2 | April-June-2015
Journal Home page: www.ijrpp.com

Case study

Open Access

Case study a key tool in Pharm D education

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ABSTRACT

The field of education has a long history of using the case study. The use of case studies has become of increasing interest to those in many areas of education and educational research. Now a days the use of case studies is becoming an interesting teaching tool. The process of using case studies will aid student's abilities to generate multiple pathways for certain circumstances and in understanding that there may be multiple, acceptable decisions for particular situations. The use of case study may range from extended case projects, thesis and dissertations with in depth research on hospitals, disease types. Case studies can be effectively used as a learning tool. The use of case studies in Pharm D curriculum can aid students improve their problem solving abilities and also practical problem solving skills. It also gives students confidence on real time work. Case studies improvise cost effective drug therapy and minimizes the incidence of drug interactions and adverse drug reactions. It is also an effective method on how students can improvise on oneself and have a check on one's own improvement. Case study also helps students to become professionally sound and gain confidence in their field because they become versatile as each day passes by and also experienced in various aspects of drug therapy. Case studies are practical based which effectively can be used to understand new phenomenon. It also aids in bringing about new innovations in patient care by exploring the students in to real time practice.

Keywords: Case study, individualizing regimen, effective learning, Cost minimization.

INTRODUCTION

Case study is an intensive description and analysis of a single individual or sometimes a group a patients. It paves way for good opportunity for innovations and also serves as an excellent method to study rare phenomenon. It also helps students to challenge theoretical assumptions and finally leads students to make acceptable decisions for a variety of clinical situations.

OBJECTIVE

Case study method is an excellent way which helps students to gain necessary knowledge for effective patient care. The main objective is to make students work for individualizing patients therapy. It makes students think critically and apply learned knowledge to daily situations in hospitals more effectively. Students can effectively learn various aspects of clinical pharmacy practice more effectively.

DISCUSSIONS

Case study acts both as an effective teaching as well as learning tool for Pharm D students. Students regularly participate in ward rounds and collect cases and effectively analyze each aspect of the case and draw conclusions and also learn a lot from it. Students on analyzing a case can actually learn many clinical aspects like drug use evaluation, clinical risk management, interpretation of patient specific details, establishing therapeutic goals, assessment of current medication management, therapeutic drug monitoring and provision of medicines information to physicians. The following are examples of different cases which have helped students to effectively learn and draw conclusions from it:

Case 1

A female patient was admitted and treated for deep vein thrombosis and profuse menstrual bleeding. She was treated with warfarin, acenocoumarol, clopidogrel and aspirin for DVT and noretheisterone for profuse bleeding. Noretheisterone is contraindicated in patients suffering from DVT. The patient was discharged with abnormally high values of prothrombin time (84 sec) and INR(6).The patient was at an increased risk of bleeding complications. It is necessary to inform the physician to stop noretheisterone in order to prevent the complications of this patient. The above case signifies the importance of analyzing a prescription and the relative condition. It is also essential to monitor the INR and prothrombin time of this patient as she is receiving anticoagulant therapy.

The first ever report stating that oral contraceptives caused an increased risk of venous thrombosis first appeared in the year 1961¹. Later many other studies further confirmed a two fold to six fold increased risk of deep vein thrombosis associated with concurrent oral contraceptive use²⁻⁶. Moreover the patient was treated with warfarin and acenocoumarol that caused increased levels of INR and prothrombin values. The patient was discharged with abnormally high INR and prothrombin without considering the risk of bleeding. The patient must have been administered with vitamin k before discharge to reduce the overall risk of bleeding.⁷⁻¹²

Case 2

A male patient of age 50 years was admitted with severe abdominal pain, edema, and ascites. The laboratory values showed that his alkaline phosphatase levels was 145, Total bilirubin 5.9,SGPT 60.6 and serum albumin 3.1g/dl. Ultrasound of abdomen reveled that he was suffering from fatty liver and he was diagnosed to have alcoholic liver disease. He was also a known case of diabetes mellitus and was on metformin 500mg for the past 4 years. Child Pugh score showed that he had Grade C liver disease. The patient was treated with injection Taxim, Injection, Lasix, Tablet Metformin.

Metformin has to be avoided in patients suffering from advanced liver disease.¹³⁻¹⁴ Metformin is also contraindicated in chronic hepatic disease because of the increased risk of metformin-associated lactic acidosis.¹⁵⁻¹⁸

Case 3

A female patient was admitted for inflammatory myositis and rheumatoid arthritis. The patient developed symptoms of moons face, abnormal weight gain, and shortness of breath and dryness of skin. These were cardinal symptoms of Cushing's syndrome. On analyzing the prescription it was found that dexamethasone which is a corticosteroid caused the syndrome. Dexamethasone also caused abnormal increase in creatinine phosphokinase levels (432 IU/L). Cushing's syndrome is a common ADR of corticosteroid therapy and the drug causing abnormal rise in creatinine phosphokinase levels for this disease condition is a rare phenomenon. This can be learned only through case studies.

Studies have shown fluorinated corticosteroids such as dexamethasone have a higher liability to cause myopathy.¹⁹⁻²⁵ This exogenous corticosteroid resulted from treating the patient for inflammation due to myositis and rheumatoid arthritis.²⁶⁻²⁸

Reports confirmed that fluorinated steroids such as dexamethasone may frequently cause myopathy than nonflourinated ones like prednisone and hydrocortiosone.²⁹⁻³¹

Case 4

From the following case the students can learn the importance and impact of cost minimization. A 65 years old male patient was admitted for Tuberculosis.

He was prescribed with. Tab. Ethambutol=Rs4.53/ tablet, Tab.Rifampicin +Isoniazid=Rs4.63/ tablet. Tab.Pyrazinamide=Rs 7.20/tablet. The total cost of treatment per day was RS 23.56. The above combinations of drugs are available as a AKT4 kit which would cost the patient Rs 12.68/day. The difference in cost is RS 11 and it can make a major difference in total health care cost of chronic disease. From this study the understanding of health care cost and its impact can be effectively documented. There is increased chance for patients to become non adherent to drug therapy. Adherence to therapy is essential for a disease like tuberculosis. Studies have

shown that improved adherence is often associated with lower total health care costs.³²⁻³⁵, especially in diseases like tuberculosis where adherence to treatment is very essential.

CONCLUSION

Case study definitely serves as an essential learning tool for Pharm D students helping them to develop critical thinking. It also helps students to analyze and apply concepts during their practice in the wards. So case study is definitely inevitable in Pharm D curriculum. It is essential for all Pharm D students to adopt and apply this key tool in day today learning

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