DRUG RELATED PROBLEM ASSOCIATED WITH THE TREATMENT FOR PULMONARY EDEMA, PNEUMONIA AND TYPE II DIABETES MELLITUS WITH GANGRENE DIABETICUM PEDIS DEXTRA IN PGI CIKINI HOSPITAL

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ABSTRACT

Pulmonary edema is a condition cause by excess fluid in the lung. This fluid collect in the numerous air sacs in the lungs, making it difficult to breath. In most cases, heart problem can cause pulmonary edema. Pneumonia is a respiratory disease (lower respiratory tract (LRT) acute, usually caused by infection. Type II Diabetes Mellitus (DM) is a group of diseases characterized by high levels of blood glucose resulting from defects in insulin production, insulin action, or both. Female, 48 year old, 65 kg and height 165 cm, was hospitalized with symptoms of wound in the right heel and pain about 1 month ago. Patient has a history of uncontrolled diabetes mellitus and allergy to neuralgin. Patient was diagnosed with pulmonary edema, pneumonia, type II diabetes mellitus with gangrene diabeticumpedisdextra. Patients has treated with Ceftriaxone injection 1 g, Lasix injection (Furosemide) 40 mg, valsartan 160 mg, Glurenorm (Gliquidone), Calcium gluconate injection, Albumin 25%, Pujimin (Supplement), Metronidazole, and Pladogrel (Clopidogrel). Based on the result of the clinic secretariat at the ward of K in PGI Cikini Hospital, it could be concluded that there was DRPs (*Drug Related Problems*). However, it can be concluded that the therapy and treatment of patients was right, but there are some things that should be evaluated.

Keywords: *Pulmonary edema, pneumonia, Type II Diabetes Mellitus , gangrene.*

I. INTRODUCTION

Pulmonary edema is a condition cause by excess fluid in the lung. This fluid collect in the numerous air sacs in the lungs, making it difficult to breath. In most cases, heart problem can cause pulmonary edema. Pulmonary edema that develops suddenly (acute) is a medical emergency requiring immediate care . Treatment for pulmonary edema varies depending on the cause, but generally includes supplemental oxygen and medication. Renal failure and the inability to remove fluid from the body can causes the accumulation fluid in the vascular, causing pulmonary edema. In people with advanced kidney failure, dialysis may be necessary to remove excess body fluid. Pneumonia is a respiratory disease (lower respiratory tract (LRT) acute, usually caused by infection. The causes can all kinds, and there are known sources of infection, the primary source of bacteria, viruses, microplasma, fungi, chemicals and particles. The disease can happened at any age, although the most severe clinical manifestations appear in children, older people and people with chronic diseases. Type II Diabetes Mellitus (DM) is a disease of cells hyperglycemia due to insulin insensitivity. Insulin levels may be slightly lower or are in the normal range. Because of insulin still produced by the beta cells of the pancreas, then the type II diabetes mellitus is considered as a non insulin Dependent Diabetes Mellitus (NIDDM). Type II diabetes can lead to complications. Diabetes Mellitus Chronic cause complications in various organs.Coronary heart attacks, kidney pains nephropathy, nerves paralyzed, or gangrene appeared on the legs and feet, and stroke. Patients with type II diabetes has risk of coronary heart disease and cerebral vascular disease bigger, deaths from heart disease 16,5%, and events this complication continues to increase.

2. METHODOLOGY

The case studies was conducted to the patient on K-Unit based on the length of patient treated. The evaluation was done based on the data of drug use, include drug name, dosage and mode of administration and rationalization of the use of the drug (the right dose, the right indication, the right patient, the right of use) with see Drug Related Problems of drug use based on the literature.

3. CASE PRESENTATION

Mrs SK, 48 year old, 65 kg and height 165 cm, was hospitalized with symptoms of wound in the right heel and pain about 1 months ago, patient has a history of uncontrolled diabetes

mellitus and allergy to neuralgin, patient was diagnosed with pulmonary edema, pneumonia, type II diabetes mellitus with gangrene diabeticumpedisdextra.

4. CLINICAL EVALUATION

In this case patient has treated with Ceftriaxone injection 1 g and Metronidazole 500 mg as an antibiotic. Lasix injection (Furosemide) 40 mg is a diuretic using for treatment of pulmonary edema. Valsartan 160 mg is an angiotensin II receptor antagonists, Glurenorm (Gliquidone) and Calcium gluconate injection using for treatment hypertension, Diabetes Mellitus and hypocalcemia, respectively. Patient also has given Albumin 25%, Pladogrel (Clopidogrel) and Pujimin (supplements).

5. LABORATORY PARAMETER

The results of examination of several hematological parameters on the different days showed any abnormalities. Test results LED 56 mm / h and 58 mm/h, an increase in LED that indicates the presence of bacterial infections in patient. Haemoglobin level was 9 g/dL and 9.1 g/dL, Leukocyte was 12.1 and 10.3 (103/mL), Erythrocytes was 3.32 and 3.34 (106/mL), Hematocrit was 27 and 28 (%), Lymphocytes was 12 and 17 (%) and Protombintime on day 6 treatment was 14.5 seconds.

Clinical chemistry test results at four times in the different measurements indicate that fluctuations in blood glucose levels at 06.00 is 174 (mg / dL), blood glucose at 12.00 is 242, 180, 151 (mg / dL), blood glucose at 18:00 is 232, 161, 178 (mg / dL), blood glucose at 24.00 is 190, 258, 182, 172 (mg / dL), showed patients had hyperglycemia.Clinical chemistry test results on two measurements on different days, showed a decrease in albumin levels are 2.3 and 2.8 (g / dL), urea and creatinine levels showed an increase, for urea is 98 and 68 (mg / dL) and for Creatinine 2.4 and 2 (mg / dL), globulin levels showed a decrease at 4.6 and 4.4 (g / dL), the levels of Potassium (K) showed an increase in blood ie 5.9 and 5.2 (mEq / L).On the first day of treatment the levels of chloride (Cl) showed an increase in blood was 112 mEq / L and levels of Calcium (Ca) showed a decrease yaitu7, 7 mg / dL. Then on day 4 treatment showed increased levels of uric acid is 9.4 mg / dL.

6. DRUG RELATED PROBLEMS

6.1. Drug Related Problem I

Ceftriaxone is a choice of therapy with the use of antibiotics to third-generation cephalosporins are prone to bleeding. Duration of treatment of at least five days, but the

giving should be continued at least until 48-72 hours after disinfection reached tangible. The patient should doing blood cultures to determine if the bacteria causing the infection is still there or not. Patients with impaired renal function and liver weight, should be monitoring medicine plasma levels.

6.2. Drug Related Problem II

Patient suffered Hipoalbumin, so doctor gave therapy with albumin 25% and Pujimin, after re-examination, but workup albumin levels showed a very small increase (still experiencing Hipoalbumin). However, administration of 25% albumin was given just three days while the results of the examination still showed decreased levels of albumin (Hipoalbumin). Albumin 25% should still be given to a change in the levels of albumin all toward better. Hipoalbumin can be caused by kidney patient has been not function well, a protein produced by the liver are excreted with urine. Impaired renal function was confirmed by the results of measurements of creatinine levels.

6.3. Drug Related Problem III

In this case the patient has a history of Diabetes Mellitus so given therapeutic use Glurenorm (Gliquidone) because the patient had a normal weight. Therapy with Glurenorm (Gliquidone) is given only for four days, butthe next results of the examination blood glucose levels showed an increase in blood glucose, but treatment with Glurenorm (Gliquidone) has been discontinued. Supposed the therapy should be given for patients suffered Hyperglycemia. Therapy in Diabetes Mellitus patients should be given continuously until normal blood glucose levels and should be examined blood glucose levels regularly.

6.4. Drug Related Problem IV

Clinical chemistry laboratory results showed elevated levels of urea (hyperuricaemia). Hyperuricemia would be causing the accumulation of uric acid in the soft tissues and joints that can arise as a clinical syndrome called Gout disease. But in this case the patient was not treated with medicine uric acid that can overcome or reduce levels of urea (hyperuricaemia)

6.5. Drug Related Problem V

Pladogrel (clopidogrel) in the treatment given only during the last four days, Pladogrel (clopidogrel) should be given of the beginning of patients was hospitalized. That is because patients with a history of diabetes mellitus can undergo thrombus that often accompanies myocardial infarction in patients with Diabetes Mellitus.

6.6. Drug Related Problem VI

There were several interactions, those were:

- Pladogrel with metronidazole; metronidazole will reduce the effects of pladogrel by changing the metabolism of medicine
- Lasix with valsartan: Effects of valsartan increased and Lasix reduce potassium levels in the blood
- Calcium gluconate with Lasix: Lasix lower levels of calcium gluconate by increasing drug elimination through the kidneys
- Ceftriaxone with Lasix: Lasix Ceftriaxone increase toxicity

7. CONCLUSION

Based on the results of the clinical examination of patients found the presence of DRP. However, it can be concluded that the therapy and treatment of patients was right, but there are some checks that must be evaluated is the examination of uric acid, urea, and Blood Glucose

8. SUGGESTION

- When being used Metronidazole should be once every three days to do a culture on wounds or gangrene that occurs in patients, to ascertain if germs that cause infection and amebiasis have been lost or not. Examination of culture can also help determine the length of treatment and when the medication should be discontinued
- All therapy treatment that has an effect or adverse reactions can be prevented by constantly monitoring and monitoring of patients during treatment, and laboratory tests are always done regularly, and periodically in order to determine the condition of the patient, and prevent exacerbations the disease.
- Patients were informed not to stop taking the drug without first consulting with your doctor (without doctorsnotice).
- For the problem of drug interactions, use of other medicine that have a mechanism of action that is similar but not cause interactions, or by giving a lag time of drug delivery that interact in order to avoid the process of interaction.

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REFERENCES

1. Hepler, C. D., Strand, L. M., 1990, *Opportunities and responsibilities in pharmaceutical care. Am J Hosp Pharm*

2. Hepler, C. D., Segal, R., 2003, *Preventing Medication Errors and Improving Drug Therapy Outcomes, A Management Systems Approach*, CRC Press LLC, Boca Raton, Florida
3. Dipiro, J.T., Talbert, RI., Yee, G.C., Matzke GR., Wells BG., Posey LM. 2008.*Pharmacotherapy:A Pathophysiologic Approach*, 7th. ed.,Appleton & Lange, Stamford.
4. Herfindal, E.T., and Gourley, D.R., 2000, *Textbook ofTherapeutics, Drug and Disease Management*, 7th. ed.,Lippincot & Williams, Philadelphia
5. Schwinghammer, T.L., Koehler JM., 2009, *Pharmacotherapy Casebook: APatient Focused Approach*, 7th. Ed., McGraw-Hill Companies,New York
6. Stockley, I.H, 2008, *Stockley's Drug InteractionEdisikedelapan*, Great Britain Pharmaceutical Press.

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