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Diploma in Pharmacy 2nd Year

Hospital & Clinical Pharmacy

Experiment

To study on drug-drug interactions.

Aim:

To study on drug-drug interactions.

Reference :

‘ Dr. Gupta G.D. , Dr. Sharma Shailesh, Dr. Sharma Anshu, “Practical Manual of Hospital & Clinical Pharmacy” Published by Nirali Prakashan, Page no 40 - 42

Theory :

1) Case I

i) Subjective :

a) Name: ABC

b) Age: 29 yrs

c) Sex: Female

d) Unit: MEDI

e) DOA: 03/02/2016

f) **Reason for Admission:** Chief complaint of reactivation of her psychotic symptoms (hallucinations, delusions and catatonic behavior), due to a lack of medication adherence

g) **Past Medical History:** Acute psychosis 1 year earlier, incomplete right bundle branch- block (RBBB) and ovarian cysts

h) **Past Medication History:** Long-term OCs, ethinyl estradiol/drospirenone 0.03mg/3mg per day

i) **Family History:** Mother had an anxiety disorder and her grandmother had a major depression.

j) Allergies and Social History: Nil

ii) Objective:

- a) Weight:** 75 kg
- b) Height:** 5'2"
- c) BP:** 150/100 mmHg
- d) PR:** 75 bpm
- e) RS:** 24/min
- f) Temperature:** 37.2°C
- g) Oxygen Saturation:** 90%

iii) Assesment:

- a. Blood Test:** Eosinophilia and an increase of C-reactive protein (5.73mg/L)
- b. Electrocardiography (ECG):** ECG revealed sinus tachycardia (135 beats/minute), QTc 043 seconds, and S-T segment depression and inversion of T waves in inferior and lateral leads.
- c. Echocardiography:** Showed a small percardial effusion suggestive of iatrogenic pericarditis.

iv) Plan - Treatment Regimen after Hospitalisation:

- a)** Her inpatient stay lasted three months, and during the first month, she received 23 days of oral treatment with haloperidol 9 mg daily and 20 mg of olanzapine daily.
- b)** On the 23rd day of hospitalisation, antipsychotics were stopped and aripiprazole 30mg per day was supplied for 6 days due to a poor response to treatment.
- c)** She was also given an oral candidiasis diagnosis that same day. and she had a week of concurrent oral treatment with fluconazole 100 mg daily and miconazole oral gel 2% 20 mg twice daily.

- d) On the final day of antifungal therapy, 29 days after admission, aripiprazole was switched to clozapine because her psychotic symptoms did not appear to get better.
- e) Clozapine was begun at 25 mg orally per day and gradually increased to 225 mg per day over the course of 16 days when psychotic symptoms subsided.
- f) After three weeks, the plasma concentration of clozapine was 542ng/mL (interval 350-450ng/mL) and the concentration of norclozapine, its active metabolite, was 216ng/mL.
- g) Patient was being treated with clozapine and OCs when the first symptoms (nausea, vomiting, palpitations) appeared, 5 days before the plasma level of the medication was determined.
- h) Long-term OC's therapy was stopped at that moment, and she was not given any other forms of contraception. Her referral to a cardiologist was made.
- i) She stopped taking clozapine a week after stopping the OCs, and she wasn't given another challenge. She displayed resolution of the side effects of clozapine, normalisation of the ECG, and total healing from the pericardial effusion within 4 days.
- j) Patient was released six days after stopping the clozapine after his symptoms became better. Two weeks after the interruption of OCs, the plasma level of clozapine was tested, and it was undetectable
- k) Transthoracic echocardiography and inflammatory indicators were both normal at the 1-month follow-up.
- v) **Drug Interaction:** The case of a multiple drug interaction involving clozapine, OCs and antifungals, which resulted in an

elevated clozapine blood level, eosinophilia and pericarditis with pericardial effusion

2) Case II

i. Subjective:

- a. **Name:** Mr XYZ
- b. **Age:** 78 yrs
- c. **Sex:** Male
- d. **Unit:** MED II
- e. **DOA:** 2/04/2013
- f. **Reason for Admission:** Chief complaint of cough and increased sputum and loss of consciousness.
- g. **Past Medical History:** Hypertension, atrial fibrillation and chronic kidney disease.
- h. **Past Medication History:** Calcium-channel blockers, nifedipine and diltiazem, as well as carvedilol (a beta-blocker), irbesartan (angiotensin receptor blocker), isosorbide dinitrate, and dipyridamole,
- i. **Family History:** Nil
- j. **Allergies and Social History:** Nil

ii. Objective:

- a. **Height:** 5'1"
- b. **Weight:** 60 Kg
- c. **BP:** 96/38 mmHg
- d. **PR:** 45 bpm
- e. **RS:** 34/min
- f. **Temperature:** 38.1°C
- g. **Oxygen Saturation:** 55%

iii. Assesement:

- a) **12-lead Electrocardiography (ECG):** Revealed atrial fibrillation.
- b) **Differential Diagnosis:** Considered were septic shock, cardiogenic shock and hypovolaemic shock.
- c) **Transthoracic Echocardiogram:** Cardiogenic shock.

iv. Plan:

- a. **Management:** Atropine for treatment of cardiogenic shock.
 - b. **For hypertension:** Calcium-channel blockers, nifedipine and diltiazem, as well as carvedilol (a beta-blocker), irbesartan (angiotensin receptor blocker), isosorbide dinitrate, and dipyridamole
- v. **Drug Interaction:** The hypotension was attributed to a drug interaction between a calcium-channel blocker and clarithromycin.

Result :

Drug-drug interactions using clinical cases was studied.