



Prof. Dr. M. KARUNANITHI
B.Pharm., M.S., Ph.D., D.Litt.,
CHAIRMAN & SECRETARY

A Newsletter on

CLINICAL PHARMA PRACTICE

An Update on Clinical Research and Drug Information



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Department of Pharmacy Practice,
Swamy Vivekanandha College of Pharmacy,
Elayampalayam, Tiruchengode - 637 205,
Namakkal (Dt), Tamilnadu, Phone : 04288-234417,
E-mail : svcpdpic@gmail.com

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PHYSICIAN DESK



Dr. K. KRUPANIDHI, M.D., (EM)
Consultant Emergency Medicine,,
Vivekanandha Medical Care Hospital.

ROLE OF CORTICOSTEROIDS IN PNEUMONIA PATIENTS

Community-acquired pneumonia (CAP) is the leading cause of morbidity and mortality from infectious diseases in developed countries. Pneumonia is the sixth leading cause of death worldwide, and age-adjusted mortality is increasing.

CAP may lead to acute respiratory distress syndrome (ARDS) and require mechanical ventilation. Because inflammation may initially clear bacteria but ultimately contribute to sepsis and end-organ failure, hence systemic corticosteroid treatment may be effective. Corticosteroids are most effective and widely used anti-inflammatory drugs.

The benefits of systemic corticosteroids in pneumonia are not clear, but their use is frequent in clinical practice. Corticosteroid treatment was associated with approximately 5% lower mortality, 5% reduction in need for mechanical ventilation, and a 1-day shorter hospital stay for adults with community-acquired pneumonia (CAP) Administration of systemic corticosteroids is associated with reduced pulmonary inflammation in patients with bacterial pneumonia and acute lung injury and improved oxygenation and outcomes in patients with Pneumocystis jirovecii pneumonia.

IMMUNOMODULATORY EFFECTS OF CORTICOSTEROIDS

Cytokines and mediators of inflammatory response play a key role in the pathogenesis of severe infections and sepsis-related organ failure and prognosis. Several studies demonstrated that the infusion of moderate doses of corticosteroids could blunt the systemic pro-inflammatory cytokine response in severe sepsis and the pulmonary inflammation in severe pneumonia and acute lung injury.

The effect of corticosteroids on surrogate biomarkers of systemic inflammation and observed more significant reductions in C-reactive protein (CRP) levels in patients treated with corticosteroids in patients treated with hydrocortisone, a significant decrease in the multiple organ dysfunction score (MODS)

MECHANISM OF ACTION

There are immediate and delayed effects on leukocyte trafficking, as well as upon the innate and adaptive immune responses. The most immediate effect of corticosteroids is to prevent the transudation of neutrophils and monocytes to the site of inflammation; this is partially responsible for the nearly universal rise in peripheral WBC count in response to corticosteroids.

Krupanidhi Karunanithi et al., 2015 conducted a study on the Effect of steroids in Influenza pneumonia (H1N1) patients in terms of length of hospital stay. It was a retrospective observational study, which consist of patients presenting with H1N1 infection at tertiary care hospital. Out of 115 patients, 30 patients have been administered steroids. Within those 30 patients 20 have stayed in ICU with mean 7.45 ± 5.7 days. In that group of 20 patients, 10 patients have stayed in ICU alone, 10 patients have stayed in ICU and ward with mean 10.3 ± 6.5 and 13.6 ± 7.4 days respectively. 10 patients have stayed only in ward with mean days of 4.8 ± 1.9 . The overall mean hospital stay was 9.8 ± 6.6 days.

Patients with CAP were treated with antibiotics and antivirals. Some H1N1 patients required oxygen, non-invasive ventilation (BiPAP), mechanically ventilation to support the airway and some were treated with inotropic supports. People with CAP treated along with corticosteroids had lower clinical failure rates, shorter time to cure, a shorter hospital stay, and fewer complications.

This study concluded that there was significant statistical relationship between corticosteroid administration and reduced hospital stay. Hence, the treatment with systemic corticosteroids showed reductions in mortality or morbidity.

STUDENTS CORNER

Case Report

Management of IHD - Old AWMI with moderate LV dysfunction, acute pulmonary edema, Hypertension, Diabetes mellitus, Hypothyroidism, UTI with sepsis and Septic shock

A 65 year old female patient presented with the complaints of fever, chest discomfort and dyspnea in emergency department of Vivekanandha Medical Care Hospital, Elayampalayam. She had a past medical history of IHD, diabetes mellitus and hypertension for 3 years and she was on irregular medication. On admission her physical examination showed her temperature of 104 °F, blood pressure of 90/60 mmHg, pulse rate 98 beats/min, respiratory rate 40 breaths /min. She also had bilateral basal crepitation on auscultation.

Laboratory testing showed a creatinine level of 1.10 (normal range: 0.6 – 1.4 mg/dl), blood urea level of 52.60 mgs/dl (20-40 mgs/dl), total leukocyte count 34,300 cells/cumm (4000-11,000). Urine analysis showed the presence of infection which confirmed the diagnosis of UTI with sepsis. She also developed septic shock which were revealed by the symptoms of sepsis, acute pulmonary edema, hypotension and LV dysfunction. The ECG showed that PPR V1-4; ST- segment decreased in lead LII, aVL, V5-6; sinus tachycardia. ECHO revealed moderate LV dysfunction.

C-Reactive protein – 18.20 (normal range: <10.0), TSH – 7.62 (0.4 - 4.0mU/L), Blood glucose (R) – 291 (70 – 140 mg/dl). Hence the patient was diagnosed with IHD- Old AWMI with moderate LV dysfunction, acute pulmonary edema, Hypertension, Diabetes mellitus, Hypothyroidism, UTI with sepsis and Septic shock. Inj. Fondaparinux 2.5 mg SC OD was started with Tab. Clopitab A 150 mg orally for antiplatelet therapy. She was then prescribed with oral T. Isosorbide dinitrate 5mg TD, T. Atorvastatin 20 mg, T. Trimetazidine 35 mg BD for her old AWMI with mild LV dysfunction. Inotropes were started as infusion – Inj. noradrenaline and dopamine for treating her hypotension and sepsis which was later tapered and stopped. Inj. Piperacillin 4.5 g IV BD, Inj. Meropenam 1g TD were given for her UTI with sepsis, T. Thyronorm 75mg OD for hypothyroidism, Inj. Furosemide 60mg for acute pulmonary edema.

After 2 days of admission, her BP was turned to normal 130/80 mmHg, pulse 78/min, no fresh changes in ECG. Patient was hemodynamically stable. She was continued with the same drugs for 2 more days and discharged. The patient was advised with T. Clopitab A 75 mg 0-1-0, T. Sorbitrate 5 mg 1-1-1, T. Concor COR 1.25 mg 1-0-0, T. Storvas 20 mg 0-0-1, T. Thyronorm 75mg 1-0-0, T. Pantoprazole 40mg 0-0-1 PC, Inj. Human mixtard 30/70 (12U-0-10U) PC.

CONCLUSION

Early recognition of symptoms followed by appropriate investigations, accurate diagnosis and early goal directed therapy is essential to improve outcomes. The primary risk factors for anterior-wall MI are hyperlipidemia, diabetes mellitus, hypertension, and cigarette smoking, all of which can be modified.



Ms. M. Nivetha (Pharm.D Intern)



Ms. S. Nandhini (Pharm.D Intern)

SVCP Pharma Quiz

- Gardasil is a vaccine indicated for the prevention of which of the following diseases caused by Human Papillomavirus (HPV)?
a) Vaginal cancer b) Hepatitis B c) Yellow fever d) Tuberculosis
- Adalimumab is NOT indicated for which of the following?
a) Rheumatoid arthritis b) Psoriatic arthritis c) Ankylosing spondylitis
d) Irritable Bowel Syndrome
- The FDA has reasonably approved Risperidone for which of the following indications
a) Obsessive compulsive disorder b) Schizophrenia c) Irritability associated with Autism
d) Bipolar mania e) Parkinsonism
- While dispensing Metronidazole patient should be informed about
a) Avoid alcohol intake b) Take the drug with meals c) Reddish discoloration of urine
d) All the above.
- Inorganic compound used as an anesthetic
a) Halothane b) Nitrous oxide c) Hyperbaric oxygen



Answer : Page 4



Ms. Reeba Bose (Pharm.D Intern)

Ref : <https://www.pharmacyexam.com/index.cfm/category/133/naplex-sample-questions.cfm>

Ref : <https://nursingwrittentestquestions.blogspot.in/2016/06/moh-exam-questions-with-answer.html?m=1>

RECENTLY APPROVED DRUGS BY CDSCO

S. No.	DRUG NAME	DOSE	DOSAGE	INDICATIONS	APPROVED ON
1.	Treosulfan	5g/vial	Bulk & injection	haematopoetic stem-cell transplantation	26.09.2017
2.	Ribociclib	200 mg	Film coated Tablets	Metastatic Breast Cancer	27.09.2017
3.	Dienogest	2mg	Bulk & Tablet	Pelvic pain associated with Endometriosis	28.09.2017
4.	Apremilast	10 mg/20 mg /30mg	bulk & film coated tablets	moderate to severe plaque psoriasis who are candidate for phototherapy or systemic therapy	13.10.2017
5.	Arbekacin	200mg/4ml	Bulk & Injection	Infections caused by Methicillin resistant Staphylococcus aureus (MRSA), Sepsis pneumonia	20.10.2017
6.	Midostaurin	25 mg	Capsules	Acute Myeloid Leukemia (AML) Advanced Systemic Mastocytosis	09.11.2017



Ms. Niva Dominic (Pharm.D Intern)

Ref : <http://www.cdscsco.nic.in/forms/list.aspx?lid=2034&ld=11>

NEW DRUG PROFILE

ANGIOTENSIN II INJECTION FOR INFUSION

BRAND NAME

- ★ GIAPREZA™
- ★ Date of approval 21-12-2017.

INDICATION Increases blood pressure in adults with septic shock or other distributive shock

DOSAGE FORM & STRENGTHS Injectable solution

DOSE ★ 2.5mg/ml.
★ 5mg/2ml.

GIAPREZA must be diluted in 0.9% sodium chloride prior to use

MECHANISM OF ACTION It raises blood pressure by vasoconstriction and increased aldosterone release.

ADR Thrombocytopenia, tachycardia, delirium, acidosis.

CONTRAINDICATION -None

CAUTIONS Risk of thromboembolism observed in clinical trials; use concurrent venous thromboembolism prophylaxis.

STORAGE:

- ★ Unopened Vials Refrigerate at 36°F to 46°F (2-8°C)
- ★ Diluted solution may store refrigerated or at room temperature.
- ★ Discard prepared solution after 24 hour.

ERTUGLIFLOZIN AND SITAGLIPTIN

BRAND NAME

- ★ STEGLUJAN™
- ★ Date of approval 22-12-2017

INDICATION Used to improve glycemic control in adults with type 2 diabetes.

DOSAGE FORM & STRENGTHS Tablets
Dose – 5mg /100mg

MECHANISM OF ACTION It is a sodium glucose co-transporter 2 (SGLT2) inhibitor, and dipeptidyl peptidase-4 (DPP-4) inhibitor combination

ADR Pancreatitis, Dehydration, Heart failure, yeast infection, ketoacidosis

CONTRAINDICATION Allergic to ertugliflozin and sitagliptin, kidney problems, dialysis.

STORAGE

- ★ Room temperature between 68°F to 77°F (20°C to 25°C)



Ms. Priyanka. M.K.N. (Pharm.D Intern)

Ref : <https://www.medscape.com/viewarticle/890494>

DEPARTMENT ACTIVITIES

CONFERENCES ATTENDED

3rd INTERNATIONAL CONFERENCE ON CLINICAL PHARMACY 21st & 22nd January 2018, MANIPAL.

- ★ Ms. Aneeta T Eldho. (Pharm.D Intern) was presented a research paper as poster on "Impact of Clinical Pharmacy Services in Medication Reconciliation Process by Pharmacy Students".
- ★ Ms. Anu Mathew. (Pharm.D Intern) was presented a research paper as poster on " Study on Management and Assessment of Health Related Quality of Life in Stroke Patients in a Tertiary care hospital".
- ★ Ms. Harini S. (Pharm.D Intern) was presented a research paper as poster on "Assessment of Clinical Efficacy and Neuropsychological Effect of Levetiracetam in Stroke Patients".
- ★ Ms. Meril Benny. (Pharm.D Intern) was presented a research paper as poster on "A Clinical Study on Effect of Telmisartan with Alpha lipoic acid on Microalbuminuria in Type 2 Diabetes Mellitus patients".
- ★ Ms. Priyanka M.K.N. (Pharm.D Intern) was presented a research paper as poster on "Incidence of Polypharmacy and Drug Related Problems among geriatric patients in a multispecialty hospital".
- ★ Ms. Nivetha M. (Pharm.D Intern) was presented a research paper as poster on "An Investigation on the Incidence and Risk Factors of Respiratory Distress Syndrome, Pneumonia and Seizure in Newborns".
- ★ Ms. Nandhini S. (Pharm.D Intern) was presented a research paper as poster on "Assessment of Alteration of Folic Acid level and Lipid Profile in Epileptic Patients".
- ★ Ms. Teena Therese Prince (Pharm.D Intern) was presented a research paper as poster on "A Study to Compare the Effectiveness of Empirical Versus Evidence Based Antibiotic Therapy in the Inpatients of Tertiary care hospital".



PUBLISHED ARTICLES

- ★ Joseph Stalin D, Chanchal Roy, Nicky Kuriakose, Silpa Sunny, Vibha K. An Investigation on the Incidence and Risk Factors of Respiratory Distress Syndrome, Pneumonia, and Seizures in Newborns, Int. J. Pharm. Sci. Rev. Res, 2017; 45(2) : 61-67.
- ★ Anandkumar S, Tamilselvan T, Surya R, Suvavarthana N, Kalpana P, Mythili S, Assessment on complication of diabetes mellitus and its management strategy in a multispecialty hospital, International Journal Of Current Medical and Pharmaceutical Research, Sep 2017, 3 (9); 2339-2342.
- ★ T. Tamilselvan, Amrita Lekshmi V, Anju C. James, Juliya Susan Reji, Namitha Cheriyan and Sojan P. Paul. Assessment of efficacy of sulphonylureas and in combination with metformin on glycemic control and lipid profile of patients with type 2 diabetes Mellitus. World Journal of Pharmaceutical Research.2017; 6(15):1115-1122.

DIC ACTIVITIES	NUMBER
No. of Patients Counselling	1251
Drug Information Queries Answered	77
No. of ADR Reported	06

SVCP PHARMA QUIZ

Answers

1. a) 2. d) 3. c) 4. d) 5. b)



Book Post

To

Please send your suggestions to
The Chief Editor

CLINICAL PHARMA PRACTICE NEWSLETTER

Drug & Poison Information Center,
Department of Pharmacy Practice,

Swamy Vivekanandha College of Pharmacy,

Elayampalayam, Tiruchengode - 637 205, Namakkal (Dt.), Tamilnadu,



Drug and Poison Information Queries Please Contact : Email - svcpdpic@gmail.com, Phone : 04288 - 234417.