Pulse Steroid In Nephrology

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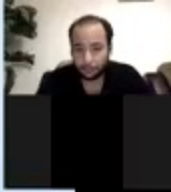
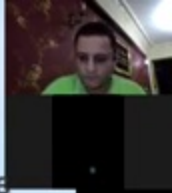


* **Pulse therapy** : administration of suprapharmacologic doses of drugs in an intermittent manner to enhance the therapeutic effect and reduce the side effects
* used in inflammatory and autoimmune conditions because they are cumulatively less toxic than sustained steroid treatment at lower quantitative dosage



MEDICATIONS USED

- Methylprednisolone (Solumedrol) half life of 12-36 hours, potency 1.25 times compared to Prednisolone

administered at a dose of 20-30 mg/kg (500-1000 mg/m2) per pulse up to a maximum dose of 1 g.

- dexamethasone (Decamycin) half life of 36-72 hours. It is 6.7 times more potent than prednisolone

administered at a dose of 4-5 mg/kg (100-200 mg) per pulse

- rapid infusions are known to be associated with a higher risk of hemodynamic abnormalities so administration over 1-3 hours is preferred

MECHANISM OF ACTION

Glucocorticoids exert a variety of immunosuppressive, anti-inflammatory and anti-allergic effects on primary and secondary immune cells and tissues by downregulation of activation of immune cells and proinflammatory cytokine production, leading to reduced expression of adhesion molecules and reduced movement of neutrophils into sites of inflammation

INDICATIONS FOR USE

Steroid resistant nephrotic syndrome

The protocol involves administration of six pulses of 30 mg/kg (maximum 1 g) of methylprednisolone or 5 mg/kg (maximum 150 mg) of dexamethasone on alternate days, followed by 4 fortnightly pulses and 8 monthly pulses, along with tapering doses of oral prednisolone on alternate days over 52 weeks, with or without oral cyclophosphamide for 12 weeks

Steroid dependent nephrotic syndrome

Four to six pulses of methylprednisolone at 20-30 mg/kg or dexamethasone at 4-5 mg/kg are administered, daily or on alternate days; following remission, therapy with oral prednisolone at 1-2 mg/kg is continued.

Rapidly progressive glomerulonephritis and vasculitis

Patients with rapidly progressive renal failure, with and without diffuse alveolar hemorrhage administered 4-6 pulses of methylprednisolone at 20-30 mg/kg or dexamethasone at 4-5 mg/kg, daily or on alternate days, followed by ntravenous cyclophosphamide 500-750 mg/m2 once a month for 6 months, along with oral prednisolone at 1-2 mg/kg on alternate days.

Systematic lupus erythematosus (SLE)

severe lupus nephritis (including WHO class III, IV, III+V, or IV+V) and severe acute non-renal disease, e.g. acute hemolytic anemia

methylprednisolone pulses for three to five days, followed by six monthly pulses of cyclophosphamide (CP) along with oral prednisone at 1.5 mg/kg per day. In the maintenance phase therapy is continued with azathioprine or mycophenolate mofetil along with oral prednisolone on alternate days