



**SNS COLLEGE OF ALLIED HEALTH SCIENCES**  
SNS Kalvi Nagar, Coimbatore - 35  
Affiliated to Dr MGR Medical University, Chennai



# DEPARTMENT OF CARDIOPULMONARY PERFUSION CARE TECHNOLOGY

**COURSE NAME : PHARMACOLOGY, PATHOLOGY AND CLINICAL MICROBIOLOGY**

**2<sup>ND</sup> YEAR**

**TOPIC : PLASMA EXPANDER**



# Plasma Expanders





# Plasma Expanders

These are high molecular weight substances which exert colloidal osmotic (oncotic) pressure, and when infused i.v. retain fluid in the vascular compartment.

They are used to correct hypo-volemia due to loss of plasma/blood.



## Ideal properties of a plasma expander are:

1. Should exert oncotic pressure comparable to plasma.
2. Should remain in circulation and not leak out in tissues.
3. Should be pharmacodynamically inert.
4. Should not be pyrogenic or antigenic.
5. Should be stable, easily sterilizable.

### Dextran

It is a polysaccharide obtained from sugar beat .



## Dextran-70

The more commonly used preparation is dextran-70.

- ❑ It expands plasma volume for nearly 24 hours.
- ❑ it is slowly excreted by glomerular filtration as well as oxi-dized in the body over weeks.
- ❑ Some amount is deposited in RE cells.
- ❑ Dextran has nearly all the properties of an ideal plasma expander.

## Dextran-40

- It acts more rapidly than dextran-70.
- It reduces blood viscosity.
- Microcirculation may improve.



## Polyvinyl pyrrolidone (PVP)

- It is a synthetic polymer (average MW 40,000) used as a 3.5% solution.
- It interferes with blood grouping and cross-matching and is a histamine releaser.
- PVP is slowly excreted by kidney and small amounts by liver into bile.
- It is stored in RE cell.





## USE OF PLASMA EXPANDERS:-

1. Plasma loss.
2. Burn
3. Hypovolemic & endotoxin shock.
4. Sever trauma & extensiv tissu damage
5. Whole blood loss.

## Contraindications

1. severe anaemia.
2. cardiac failure.
3. Pulmonary edema.





THANK YOU