

Prostaglandins

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→ These are most prevalent eicosanoids found in almost every tissue and body fluid.

⇒ Pharmacological actions :-

different types of PGs produce different effects.

① CVS :-

PGE, PGF and PGI (Prostacyclin) are potent vasodilators.

↓
Fall in Blood pressure.

→ They are stronger than Ach and histamine.

⇒ Thromboxane (TXA) having vaso-constriction effect.

② GIT :-

most PGs stimulates GIT sm

↓
↑ se peristalsis

↓
cause diarrhoea

⇒ PGI₂ :- inhibits gastric acid secretion and enhances the mucous formation.



So they have protective effect on gastric mucosa.

③ Bronchial muscle :-

→ PGE₂ and PAF₂ → Strong bronchodilators.

→ PGF₂ and TXA₂ → Strong bronchoconstrictors.

⇒ imbalance b/w PGEs may precipitates Asthma.

④ Kidney :-

PGI₂ and PAF₂ causes . . .

↓
Renal vasodilation

↓
diuresis

5) Nervous system :-

PGs administration
in cerebral ventricles.

↓
elevates body temperature

↓
produce fever.

⇒ PGs sensitize nerve endings
when given intradermal way,

↓
produce pain.

→ They have a role in genesis of
inflammation.

6) Reproductive system :-

In male,

PGs are present in the
semen

↓
to facilitate movement of
sperms into female genital tract

↓
and also involved in fertilization.

→ In Female,

$PGF_{2\alpha}$ and PGE_2 produce ...

uterine contraction

(specially during pregnancy.)

⇒ In late pregnancy,

↑ level of PGS

initiation and progression
of labour.

so used as Ecbolics.

Therapeutic uses of PGS :-

① gynaecological :-

(a) Abortion :-

$PGF_{2\alpha}$ and PGE_2 produces abortion in cases where oxytocin is insensitive.

(b) induce labour :-

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⇒ PGE involves in initiation and progression of labour by contracting uterus.

② ⇒ Peptic ulcers :-

PGE are very useful for the prevention of peptic ulcers in patients on high dose of NSAIDs.

③ ⇒ Asthma :-

PGE₂ → bronchodilator



use in Asthma.

④ ⇒ CVS :-

PGE → vasodilators



use in hypertension.

⇒ They also prevent platelet aggregation during haemodialysis.

⑤ ⇒ Glaucoma :-

PGE are useful in open angle glaucoma as they lower intra-ocular pressure.