

## Drugs summary - Pharma 5

- Aspirin could displace other highly protein-bound drugs such as warfarin, phenytoin, valproic.

- propionic acid derivatives:-

Ibuprofen, Naproxen, Fenoprofen, Ketoprofen, Flurbiprofen  
سواء في الوريد أو عن طريق الفم

- Acetic Acid derivatives:-

indomethacin, sulindac, Etodolac

toxicity, GI → limits its use to treat Gout + Ankylosing spondylitis.

- Oxicam derivatives:-

piroxicam, meloxicam

↳ selective Cox2, cause GI irritation more than piroxicam.

- Fenamates:-

Mefenamic Acid → associated with inflamm. Bowel + some cases of hemolytic Anemia.

~~Heterot.~~

- Heterocaryl acetic acids:-

Diclofenac, tolmetin, Ketorolac.

↳ more potent than indomethacin + Naproxen.

↳ used in inflamm. condition of the joints.

→ contraindicated in Asthmatic patient → **Ibuprofen + Naproxen**

→ contraindicated in Asthmatic + peptic ulcer patient → **Diclofenac Sodium.**

- selective inhibitor of Cox2 →

meloxicam, celecoxib, Rofecoxib → withdrawn from the market

↳ still used with warning Black Box → due to Adverse-thromboembolic effect

- Overdose of ~~Acety~~ Acetaminophen → lead to produce toxic metabolites

to avoid toxicity from Acetaminophen → take Acetyl cysteine which remove toxic effect

(toxic Radicals)

# Drugs - summary - Pharma 6

## \* Drugs For RA \*

~~NSAIDs~~

NSAIDs, DMARDs, Glucocorticoids

~~NSAIDs~~

DMARDs → (synthetic)

1] Methotrexate → - inhibit thymidine + purine

- inhibit AICAR + thymidylate synthetase

- Has some effect on dihydrofolate Reductase

- inhibit AMP deaminase → Accumulation of AMP

Note → Folic acid supplement Reduce Adverse effect,

Extracellularly.

→ monitor the body → CBC + FBC + Doing Liver Function test

↳ ALT + kidney <sup>creatinine</sup>

2] Sulphasalazine → - Sulfapyridine ; the most Active metabolites

- ↓ RA Factors (↓ IgM + ↓ IgA)

- suppression T cell Response + B cell proliferation

- Eliminated through Liver

- Cause Rashes

- ↓ T-cell mitogens

3] Chloroquine/Hydroxychloroquine → - inhibition of DNA + RNA

- Stabilization of lysosomal Enzyme

- Adverse Effect → Ocular toxicity, Retinal toxicity.

- Rashes + some times Nightmares

4] Leflunomide → - dihydroorotate dehydrogenase → Rate limiting step.

- ↓ Lymphocyte proliferation (↓ T + B cells)

- ↑ IL-10, ↓ IL-8 + ↓ NF-κB

- hepatic Elimination (By Liver)

- Avoid pregnancy upto 2 years after stopping treatment.

- Adverse effect → ↑ BP + Rashes + mild alopecia

5] cyclophosphamide → - phosphoramide mustard → active metabolites

- Prevent Cell Replication.

- used to treat SLE, vasculitis, Wegener's granulomatosis

- Adverse Effect → loss of Appetite + change color of

Finger nails + toenails

6] cyclosporine → - Given - orally - IV + inhalation - ophthalmic solution

- metabolize by cytochrome P450 → lead to multiple Reaction

- Adverse effect → Hirsutism, hyperkalemia, hypertension

↳ Kaposi's sarcoma, skin cancer, Nephrotoxicity

↳ Alter mental status, seizures

- used in ORGAN transplantation.

- used in Autoimmune disorder → psoriasis + Asthma

RA

## Drugs - summary - pharma 6

7] Mycophenolate Mofetil  $\rightarrow$  MMF  $\rightarrow$  mycophenolic Acid  $\rightarrow$  active metabolites  
 $\downarrow$  Reversible  $\leftarrow$  inhibit inosine monophosphate dehydrogenase.  
derived from mold  $\leftarrow$  inhibit B+T cell proliferation  
used in SLE, vasculitis, wagner's

\* combination therapy \*

triple  $\rightarrow$  methotrexate, sulphasalazine, hydroxychloroquine (2)  
double  $\rightarrow$  (1) [methotrexate, leflunomide] / [methotrexate, sulphasalazine]  
[methotrexate, hydroxychloroquine] (3)

$\Rightarrow$  Biological therapy  $\rightarrow$

$\rightarrow$  monoclonal Ab for TNF  $\rightarrow$  Infliximab, Adalimumab

$\rightarrow$  monoclonal Ab for CD20  $\rightarrow$  Rituximab

$\rightarrow$  Soluble Receptor for TNF  $\rightarrow$  Etanercept. Recept = Receptor

$\rightarrow$  Receptor Antagonist for IL-1  $\rightarrow$  Anakinra انجر

$\rightarrow$  Adverse Effect  $\rightarrow$  1- demyelinating disorders

2-  $\uparrow$  chance of Malignancy

3- worsening congestive heart failure.

\* Abatacept  $\rightarrow$   $\downarrow$  inhibit T cell activation through inhibit CD28

$\rightarrow$  contains endogenous ligand CTLA-4.

$\rightarrow$  used as monotherapy or can combine with other DMARDs.

$\rightarrow$   $\uparrow$  Risk of infection  $\rightarrow$  combination isn't recommended

$\rightarrow$  Adverse Effect  $\rightarrow$  HSR + Anaphylaxis +  $\uparrow$  Risk of lymphoma