



PSG DIC News Digest

A Newsletter from Drug Information Center, Department of Pharmacy Practice

PSG COLLEGE OF PHARMACY, Coimbatore - 641 004, Tamil Nadu

Phone : 0422-2570170 Extn : 5681, Email : psgdpic@gmail.com

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CHANGING TRENDS IN MANAGEMENT OF PSORIASIS



Dr. C.R. Srinivas, MD(DVL), FRCP(glasg)

Professor & Head

Dermatology department

PSG hospitals

Dr. R.Jayashree, MBBS, DDVL

Jr. Resident

Dermatology department

PSG hospitals

Introduction: Psoriasis is a multifaceted disease affecting 2-4% of the population, presently with erythematous scaly plaques involving the scalp, trunk, extensor aspect of extremities, palms, soles and nails.

History: The word 'psora' referred to 'Itch' in Greek. Though the history of psoriasis dates to the 'Ancient Greeks', the history of treatment of psoriasis is relatively short and started only in the 19th century.

History of treatment of psoriasis:

19th century: Arsenic & Ammoniated mercury. 1900-1950s: Anthralin and Tar

Anthralin: Synthetic form of chrysarobin which acts directly on the stem cell population of epidermis thereby inhibiting DNA synthesis, mitotic rate and repair.

Methods of Anthranol delivery:

a. Ingram technique:

Tar bath (120 ml of coal tar & 30 ml of teepol added to 90 ml of water)



UVB (ultra violet beam)



Application of 0.42% dithranol in stiffened lassara paste

Short contact therapy: Higher strength of dithranol (0.5%, 1%, 2%) kept in contact with skin for 10, 15, 20, 30 or 60 mins.

Change of time & strength made at weekly interval. Contraindicated in unstable psoriasis.

Coal tar: Byproduct obtained by the processing of coke and gas. Can be divided by their source as Shale tar, Wood tar, Coal tar

MOA: Photodynamic & antimetabolic properties

Indication: Stable psoriasis

Goekerman therapy:

Application of crude coal tar → UVB → tepid water bath → repeat the cycle.

Tar bath: With solution of tar(prepared by adding liquor carbonis 6-12 ml to a glass of water) half-an-hour → Sun exposure

Adverse effects: Irritation, Acne, Folliculitis, Smarting, Carcinogenicity

1950s: Corticosteroid era began and revolutionized the treatment of many diseases. Suzlberg and Witten reported that compound F hydrocortisone was the 1st moderately successful topical steroid in inflammatory skin diseases including psoriasis.

1970s: PUVA THERAPY: Based on interaction between UV radiation & photosensitive chemical (i.e) Psoralen. Available as topical lotion/cream & bath water delivery.

MOA: Induction of photoproducts thereby inhibiting cell proliferation.

1972s: METHOTREXATE: FDA approved methotrexate for the treatment of psoriasis. It is a competitive antagonist of 'dihydrofolate reductase' which binds to the enzyme and thereby inhibits cell cycle. Also has anti-inflammatory & immunosuppressive properties.

Dose: Test dose of 5 to 10 mg to prevent myelosuppression.



CBC (complete blood count) & LFT (liver function test)



Increase the dose by 2.5 to 5 mg/week

In psoriasis: Clearance achieved at 10-15 mg/week

1980s: Narrow band UVB, Retinoids & Vitamin D:

Although therapeutically successful, PUVA therapy carries an increased risk of skin cancer. Use of 'Retinoids' came into the picture. The term 'Retinoids' includes all synthetic & natural compounds that have activity like vitamin-A. Initially 2nd generation Retinoids: Etretinate & its derivative Acitretin were used, subsequently 3rd generation retinoids, tazarotene was widely used for the treatment of psoriasis.

1981s: Parish & Jaenicke demonstrated UVB wave lengths 300 & 313 nm produced greatest remissions of skin lesions. Subsequently trials reported 311 nm spectrum produced clearance of lesions with less erythema.

1985: Morimoto & Kumahara reported improvement of psoriasis in a patient treated with 1,25(OH)2D3 for her osteoporosis.

MOA: Control of keratinocyte differentiation and proliferation in addition to bone mineralization & intestinal calcium absorption. Many Vitamin D analogues have been synthesized then. They are: Calcipotriol, Calcitriol, Tacalcitol.

1990s: Cyclosporine: Derived from soil fungus *Tolypocladium infaltumsgams*

MOA: Cyclosporine + cyclophilin → decrease calcineurin phosphatase → reduces effect of transcription factor in T cells → downregulates IL2 which is a major activator of T-cells in various immunological disorders including psoriasis. Approved by FDA in 1997 for the treatment of psoriasis.

Hydroxyurea: This drug has a chemical structure of urea with an added hydroxyl group 1st synthesized in 1869 by Dressler & Stein.

MOA:

Ribonucleotides $\xrightarrow{\text{Hydroxyurea}}$ Deoxyribonucleotides
Inhibits Ribonucleotide Diphosphate Reductase

Dose: 500 mg BD or TID → decreased to 500 mg OD or BD.

Availability: ● C. Hydrea (500 mg) ● C. Droxxa (200, 300 & 400 mg)

PSORIASIS TREATMENT DISCOVERIES OF TODAY & TOMORROW:

Beginning in January 2003, a number of biological agents were approved by FDA for treatment of psoriasis including:

- Alefacept, Efalizumab
- Etanercept, Infliximab

The efficacy of these agents suggest that Psoriasis Pathophysiology also involves immune mediators in addition to T-Cells.

MISCELLANEOUS TREATMENT MODALITIES:

- Azathioprine
- Fumaric acid ester & its derivatives
- Colchicine
- Balneotherapy(salt water bath & exposure to sunlight)
- Lasers: 308 nm excimer Nd: yag laser(1320 nm), CO2, Flashlamp PDL

Conclusion:

Our understanding of psoriasis and ability to treat has evolved tremendously in the past few decades. The rich history and innovative therapeutics serves as an inspiration for continued discovery about psoriasis and its therapy.

Drugs in Indian Market

S.No	PRODUCT NAME	INDICATION	DATE OF APPROVAL
1	Irinotecan HCl Trihydrate Injection 20 mg/ml (Pack Size 25 ml)	For Metastatic colorectal cancer	31/08/2010
2	Pirfenidone film coated tablet 200 mg	For Idiopathic pulmonary fibrosis	14/09/2010
3	Zileuton uncoated bilayered extended release tablet 600 mg	For the prophylaxis and chronic treatment of asthma in adults.	09/10/2010
4	Exenatide Injection (Additional indication)	Exenatide is a glucagon like peptide-1 (GLP-1) receptor agonist indicated as an adjunct to diet and exercise to improve glycemic control in adults with Type 2 diabetes mellitus.	09/10/2010
5	Levonorgestrel 100 mcg +Ethinyl estradiol IP 20 mcg tablet	(Additional indication) For moderate acne vulgaris in women more than 18 years of age who have no therapy contraindications to oral contraceptive therapy, desire contraception, and have achieved menarche	13/10/2010
6	Lubiprostone Soft Gelatin Capsules 8 mcg /24 mcg	1. For Chronic constipation in adults. 2. For Irritable bowel syndrome with constipation (IBS-C) in women > 18 years old	16/10/2010
7	Pazopanib (as Hydrochloride) film coated Tablet 200 mg / 400 mg	For Patients with advanced renal cell carcinoma.	16/10/2010
8	Opipramol dihydrochloride Tablet 50 mg/100 mg.	For Generalised anxiety disorder (GAD) and somatic disturbances.	13/11/2010
9	Ondansetron Rapid Film Oral Strip 4 mg/8 mg	For Chemotherapeutic induced nausea and vomiting	16/11/2010

Ref: www.cdsc0.nic.in



Suggestions to Alleviate Nutrition-Related Side-Effects in Anti-Cancer Treatment

**Nutrition
News**

Nutrition-related side-effects may occur or become worse as cancer becomes more advanced. Nutrition therapy can help alleviate some of the side effects of the treatment. Given below are the side-effects and suggestions:

- Anorexia - Try to maximize intake by taking high-energy / high-protein foods; gentle exercise / fresh air before meal may promote appetite.
- Taste changes - Try food chilled ; eat more of the foods that still taste good; if red meat doesn't taste right, try poultry, fish, eggs instead; stronger flavors like ginger, lemon or spices may help; maintain regular mouth care.
- Dry mouth - Sip cool drinks; try using a drinking straw ; suck ice chips; sharp tastes like grape fruit or lemon may stimulate saliva; severe meals with sauce or gravy
- Nausea & vomiting- Avoid off-putting smells; plain foods in small quantities may be better tolerated ; avoid lying down after eating (a gentle walk may help); sip drinks throughout day but wait for 15 min after eating before taking more fluid ; try ginger flavors, mints, and plain biscuits.
- Mucositis (sore mouth ± esophagus) - Try soft, smooth foods with plenty sauce; avoid spicy and salty foods and sharp, citrus tastes ; chilled or warm foods may be less painful than hot; coarse / crumbly food like toast, crackers, and pasty may be better avoided.
- Diarrhoea - Avoid irritating foods that exacerbate, e.g; pulses, onions, strong spices; consider reducing fibre-rich foods (including whole grains, fruit and vegetable intake if intake is already high); ensure fluid intake is adequate and try and keep eating even if small quantities of smooth foods; reducing fat intake and milk products often suggested; this may have a negative effect on nutrient intake so individual advice from dietician is required.
- Constipation - This may arise secondary to cancer, treatment, or analgesia or simply from a poor intake and inactivity; eating more and gentle exercise may help; increase fluid intake ~2litre / day, increasing intake of fruit, vegetable and whole grain cereals may help if tolerated; prunes and prune juice; a little hot water on walking may stimulate the bowel.
- Tiredness - Ignore the clock and eat when you feel more awake; a variety of well-balanced snacks can be as nutritious as a mini meal; ask for help with food preparation or use ready meals or home-delivered food.

Mrs. V. Kavitha, M.Sc, PGDND, RD,
Senior dietitian, PSGIMSR Hospitals.

Department activities:



- Students of Pharm.D 5th year participated a workshop on "Emerging trends in pharmacy practice" at Manipal College of pharmaceutical sciences on 15/12/2010.
- Campus tour was organized at PSG College of pharmacy for students and faculties of San Diego University, San Diego on Feb-2011.
- Continuing education session for pharmacists in PSG Hospitals was conducted on 09/02/2011 in the topics Pharmacy & Therapeutic committee, Role of Pharmacist in dispensing and storage of medicines & Hospital formulary by Mrs. Prudence A Rodrigues and Mrs. An dhuvan G, Assistant Professor Department of Pharmacy practice. A session on inventory management with computers was conducted by Mr. Selvakumar, Head department of Information Technology.
- Students of Amrita College of Pharmacy visited PSG College of pharmacy on 12/02/2011 as a part of educational visit. An interaction session was also arranged with the staff and Pharm D students of PSG college of Pharmacy.
- Mr. Britto Duraisingh of 5th pharm D received second prize in ICMR sponsored National seminar on "Advances in traditional drug discovery and clinical drug evaluation at RVS College of pharmacy on 17/02/2011
- A General medical camp at Thondamuthur was conducted on 05/03/2011 with the doctors form General Medicine, Peadiatrics, Ophthalmology, Gynaecology and Surgery departments of PSG hospitals. About 62 patient were participated.
- Journal club activities was conducted for Pharm.D students and papers were presented:
 - Approaches to the study of drug-induced liver injury
 - A study of potential drug-drug interaction in prescriptions received at selected community pharmacies
 - Effect of emergency medicine pharmacists on medication error reporting in an emergency department
 - Pharmacists participation in the documentation of medication history in a developing setting : an exploratory assessment with new criteria
- In the month of April 699 patients were counseled, 15 Drug queries were received, 230 prescriptions were audited
- Out of 33 prescriptions, prescribing errors were 21%, dispensing errors were 76% & omission errors were 03%
- Ongoing projects by Pharm.D students
 1. A study on drug utilisation pattern of fast moving drugs in multispeciality hospital.
 2. Clinical pharmacist intervention in patient's drug therapy in a multispeciality hospital.
 3. Pharmacoeconomical assesment of lipid lowering agents utilized in a multi-speciality hospital-a cost effectiveness analysis.

New FDA Approved Drugs 2011

S.No.	Brand name	Generic name	Indication
1.	Abstral	Fentanyl sublingual tablets	For Breakthrough cancer pain
2.	Benlysta	Belimumab	For Systemic Lupus Erythematous
3.	Daliresp	Roflumilast	For Chronic Obstructive Pulmonary Disease
4.	Edarbi	Azilsartan medoxomil	For Hypertension
5.	Gralise	Gabapentin	For Postherpetic neuralgia
6.	Makena	Hydroxyprogesterone caproate injection	For the prevention of risk of pre term birth
7.	Vilbryd	Vilazodone hydrochloride	For Major depressive disorder
8.	Yervoy	Ipilimumab	For Metastatic melanoma

Ref: <http://www.drugs.com>

Can Cavities Be Contagious?



Can Cavities Be Contagious?



Most People do not understand that dental decay is the end point of a transmissible, communicable bacterial infection. Dental decay is caused by a bacterium, *Streptococcus mutans*, which is contagious, like common cold or flu and it's being spread from adults to children.

Ref: The New York Times
www.nytimes.com/pages/health/research/index.html

Drugs Banned in India

S.No.	Generic name	Indication	Reason for ban
1.	Fenfluramine	Antiobesity drug	Causing heart valve problems and sudden death
2.	Rimonabant	Antiobesity drug	Depression, suicidal tendencies and seizures
3.	Sibutramine r-sibutramine	Antiobesity drug	Heart related side effects
4.	Astemizole and terfenadine	Anti-histamine	Polymorphic ventricular tachycardia and even death (high dose)
5.	Phenformin	Antidiabetic drug	High risk of lactic acidosis.
6.	Rofecoxib and valdecoxib valdecoxib	Analgesic	Heart attack and stroke
7.	Nimesulide	Analgesic	Liver failure
8.	Cisapride	Anti-acidity drug	Heart abnormality
9.	Phenylpropanolamine	Anti-histamine	Increases the risk of strokes
10.	Human placenta extract	Reducing radiation side effects and female infertility	No known efficacy
11.	Rosiglitazone	Antidiabetic drug	Cardiovascular events and adverse effects on lipid profile

Ref: 1. <http://indiatoday.intoday.in/site/story/government-bans-nimesulide/1/129859.html>
2. <http://cdsco.nic.in/html/drugsbanned.html>



Benzodiazepins: 3 members that undergo extrahepatic metabolism
"Outside The Liver":

Oxazepam, Temazepam, Lorazepam

Beta-1 vs Beta-2 receptor location

"You have 1 heart and 2 lungs":

Beta-1 are therefore primarily on heart, Beta-2 primarily on lungs

Respiratory complications of anaesthesia: Patients at risk

COUPLES: COPD, Obese, Upper abdominal surgery, Prolonged bed rest,
Long surgery, Elderly Smokers

Ref: <http://www.medicalmnemonics.com/CGI>

REPORTED ADR IN PSG HOSPITALS THROUGH PHARM.D STUDENTS

Department	Drug	Reaction	Date
Dermatology	Inj. Dolonex (Piroxicam)	Fixed drug eruption	12/02/11
Dermatology	R. Cinex (Rifampicin+Isoniazid)	Urticaria	19/03/11
Dermatology	Zyloric (Allopurinol)	Lichenoid dermatitis	02/03/11
Dermatology	Folitrax (Methotrexate)	Oral and skin ulcer	04/04/11
Dermatology	Niflox TZ (Norfloxacin+Tinidazole)	Fixed drug eruption	04/04/11
Dermatology	Flucinolone	Rosacea	04/04/11
Dermatology	Dapsone	Hemolytic anaemia	04/04/11
Pulmonology	Inj. Aminophylline	Seizure	29/03/11
Pulmonology	Akurit-4 (RIEZ)	Hepatitis	09/02/11

Reported ADR in PSG hospitals by various departments

Department	Drug	Reaction	Date
General medicine	Inj. ceftriaxone	Erythematous rashes	06/03/11
Surgery-female	Inj. Levoflox	Itching	07/03/11
Surgery-III	Magnex	Skin reaction	09/03/11
Gastroenterology	Inj. Ceftriaxone	Itching, vomiting	15/03/11
Emergency	Levofloxacin	Test dose allergy	31/03/11
Emergency	Ciprofloxacin	Rashes, itching	04/04/11

Reported by : **Dr K. Bhueneswari**, Chairperson, Peripheral Pharmacovigilance Centre,
Department of Pharmacology, PSGIMS&R



Drug Literature:

<http://www.tsrlinc.com/services/bcs/search.cfm>

Very useful website for finding the Biopharmaceutical classification system of most of the drugs. This is preloaded database from Therapeutic Systems Research Laboratories (TSRL).

www.rxlist.com

Contains drugs information of approved drugs in USA. Pharmacokinetics & Pharmacodynamics of approved drugs of USA.

<http://www.pharmakonalpha.com>

Product information (pharmacology & formulation details) approved in USA.

<http://www.medicines.org.uk>

Contains drugs information of approved drugs in UK. Pharmacokinetics & Pharmacodynamics of approved drugs of UK.

www.drugs.com, <http://www.rxmed.com>

Data related to the Pharmacokinetics and Pharmacodynamics of drugs.

<http://www.drugbank.ca>

Contains data related to the chemical information of all drugs, including chemical structure, chemical formula, pKa, half life etc.

<http://www.acdlabs.com/download/#db>

Provides free downloadable software for knowing the logP, pKa, chemical structures etc

<http://www.druginfosys.com>

Pharmacology of drugs

<http://www.betterchem.com>

For drug information, patent information, generic drug approvals, DMFs information, etc.

http://druginfo.nlm.nih.gov/drugportal/drugportal.jsp?APPLICATION_NAME=drugportal

Find the Drug information, Leaflet, clinical trials & toxicological studies data, etc.

Pharma news:

<http://www.pharmabiz.com>

<http://www.expresspharmaonline.com>

<http://www.pharmalive.com>

<http://globalresearchonline.net/clientpdf/Useful%20websites%20of%20Pharmaceutical%20Field.pdf>