



# Drug induced contact dermatitis

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# Introduction



- An adverse cutaneous reaction caused by a drug is any undesirable change in the structure or function of the skin, its appendages or mucous membranes, and it encompasses all adverse events related to drug eruption, regardless of the etiology.
- Cutaneous adverse drug reactions (CADR) are the most frequent of all manifestations of drug sensitivity.
- They manifest with varied and diverse morphological patterns ranging from trivial urticaria to severe forms of vasculitis or toxic epidermal necrolysis and cutaneous necrosis or gangrene.



- Contact dermatitis (CD) is an inflammatory response of skin following an exposure to exogenous either allergen or irritant.
- Among the skin complaints caused by drugs, the most frequent one is contact dermatitis due to topical medications frequently used by dermatological patients or in post operative patients as antiseptics or for pain relief.
- Among allergic contact dermatitis the topical medications are responsible for 14-40% of the cases according to various **statistics**. (Bernard Y-H. Thong, Teck-Choon Tan; Epidemiology and risk factors for drug allergy; Br J Clin Pharmacol / 71:5 / 684–700)
- Allergic CD due to drugs often remains undiagnosed, misdiagnosed or empirically diagnosed when the contributory allergens are not **identified**.



- In our region we have been frequently encountering ACD in skilled urban dwellers as well as unskilled manual labourers from rural areas
- These patients show varied clinical presentations and disease course.
- A systematic study of these patients, presentations and allergens responsible in various groups has not been done.
- Hence this study has being conducted to identify the various presentations of CD.
- An attempt will also be made to identify the most common allergen in the study population.

# Aims and objectives



- To find out the possible culprit medicinal agents/groups causing contact dermatitis.
- To study various clinical patterns, causality and severity of Drug induced contact dermatitis.
- To study the demography of Drug induced contact dermatitis.

# Materials and methods



- Minimum sample size 75
- Study Protocol was approved by institutional ethical committee.
- Informed consent was taken from each patient.



- Diagnosis of Drug Induced Contact Dermatitis was done with an expert opinion of dermatologist along with standardized questionnaires like
  - Naranjo's algorithm (causality assessment)
  - Thorton scale
  - Modified Schumock scale
  - Hart-wig shigel (severity scale)
- } (preventability)



- **Inclusion criteria**

- Both the sexes were involved.
- patients of any age were included in the study
- Any evidence or history of drug intake
- Red rash, itching, blister around the contact area.

- **Exclusion criteria**

- *No history or evidence of drug intake*
- *Other dermatological conditions.*

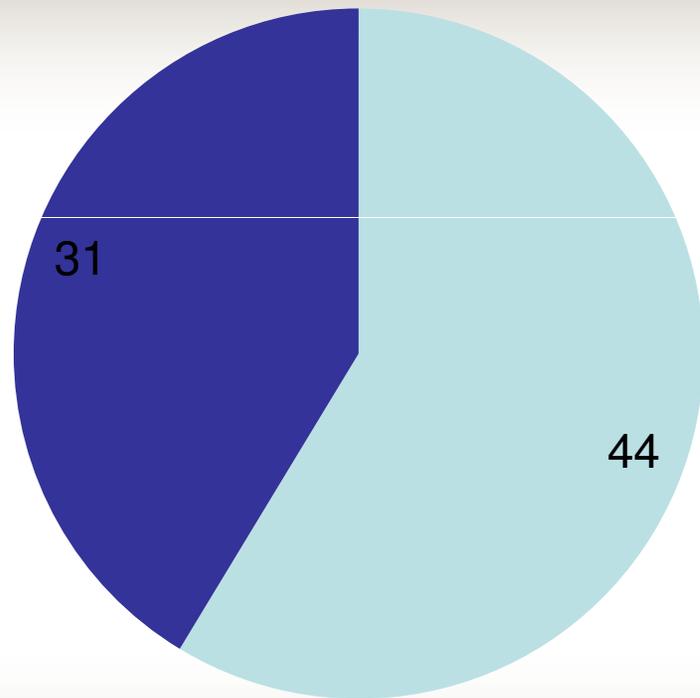


# Results

# Results



Sex



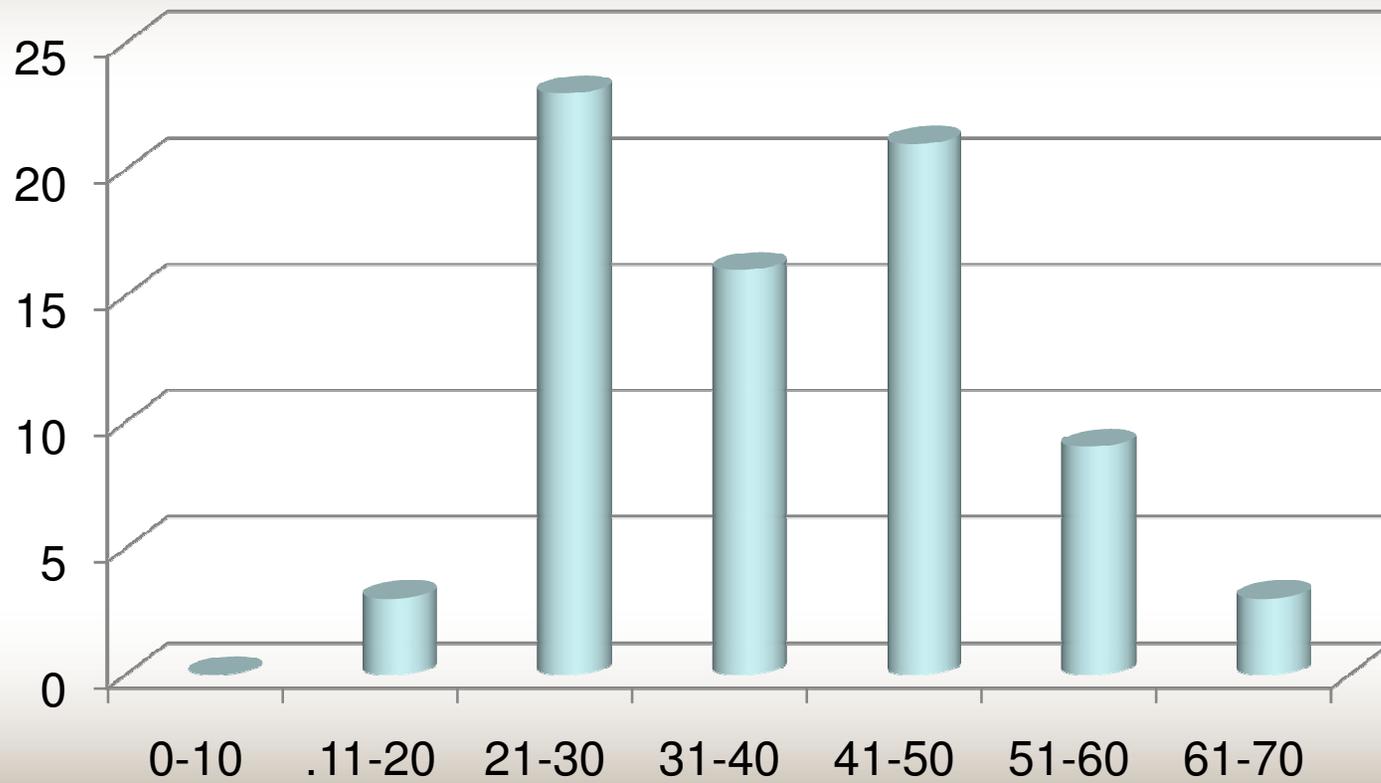
- Males
- Females

# Common age groups

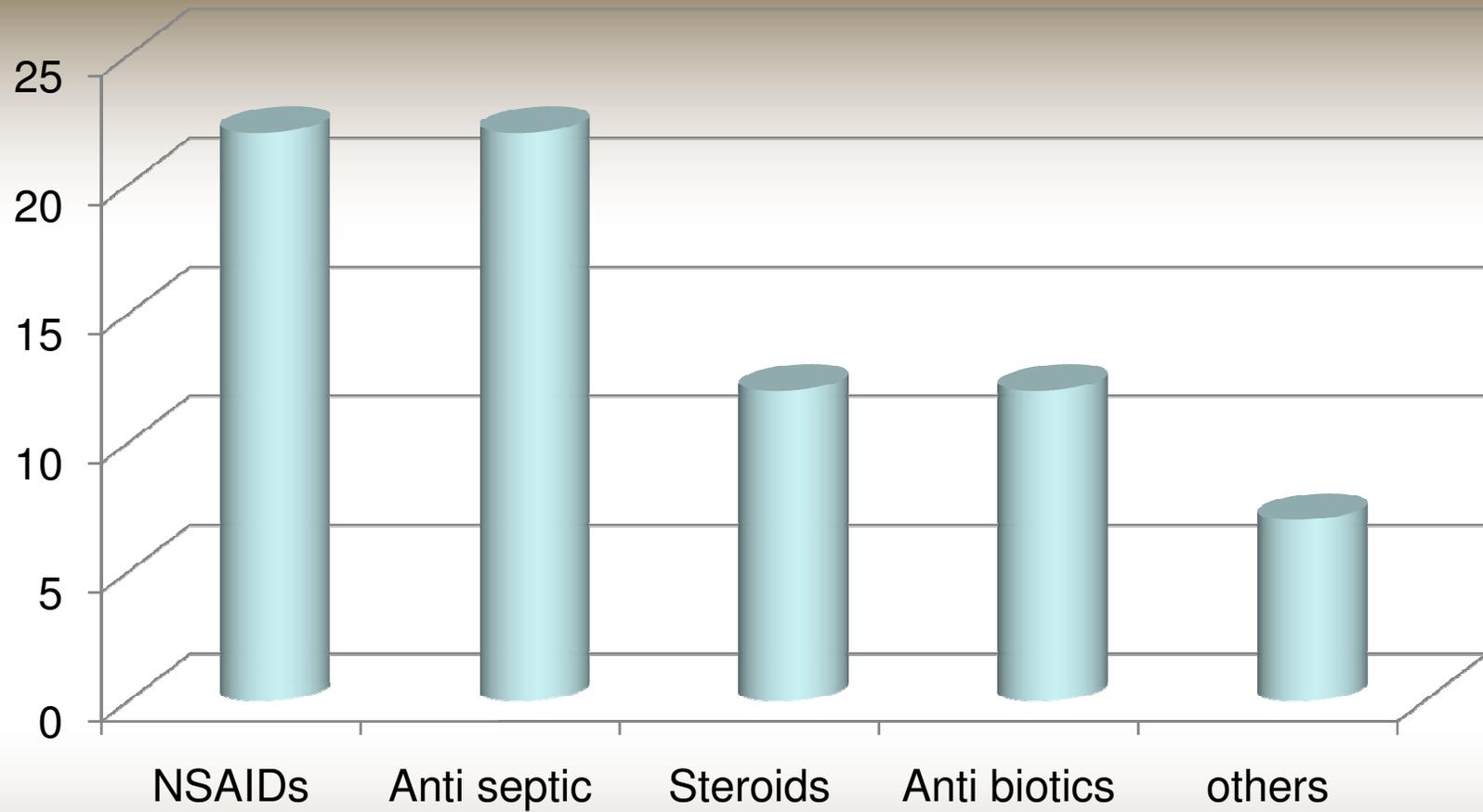


**Age groups**

X axis- no. of pts.  
Y axis- age in yrs



# Common agents





- The most common antiseptic was Povidone iodine and amongst the NSAIDs Diclofenac gel was the commonest.
- Neomycin was the commonest antibiotic while others were Clindamycin and Framycitin cream and Mometasone furoate was commonest culprit in steroids while others were Betamethasone and Budesonide.

# Hartwig severity scale



- On Hartwig severity scale out of 75 patients, 35 were mild while 40 were moderately severe.

**Mild severity** - An ADR occurred but required no change in treatment with the suspected drug or held discontinued or changed. No Antidote/ treatment is required.

**Moderate severity** – pt. required either antidote or other treatment was required or it increases the length of hospital stay or ADR is the reason for hospital admission.

**Severe**- permanent harm or leading to death of the pt. either directly or indirectly



- Rash and Itching were the most common symptoms observed in patients and all the symptoms started decreasing on 5th day and disappeared on 10th day of the follow up.
- Contact time for Betadine were found to be 12-20 hours, for steroids 14-22hours , for antibiotics 16- 30 hours and NSAIDs 7-10hours
- Out of 75 patients 4 patients ( 5.3%) required intervention.( 3 patients stopped taking the drug (diclofenac gel) and 1 patient switched to oral T/T (oral diclofenac)



- Naranjo's scale attributed all cases as probable ADRs (possible 1-4, probable 5-8, definite > 9) and possible by WHO causality scale.
- All cases were proved to be probably preventable by Modified Schumock and Thronton preventability scale

# Discussion



- The present work investigated the possible causes of a drug induced contact dermatitis encountered in our hospital.
- The result from present work showed that Diclofenac gel (NSAID's), Povidone iodine (antiseptic), Neomycin (antibiotic) Mometasone (steroid) were the most common causes in their respective groups.
- 4 cases of CD were reported with heparin cream and 3 cases with Timolol e/d.



- Drug related factors that affect its immunogenicity include its ability to act as a hapten, a prohaptent or to bind covalently to immune receptors
- Thus, certain classes of drugs tend to be associated with a higher frequency of drug allergies compared with others.



- Our finding supports the results of Amit vij et al, who observed that the most common cause of CD were antiseptics and steroids followed by NSAID's. It also supports our finding that most common age group is 21-30years.
- Aiste beliauskene et al, found Povidone iodine as the most common cause of CD in pts having chronic leg ulcers.
- Seidenari et al, found the most common cause of CD were antibiotics and the most common age group was 40-60years

# Conclusion



- It is known that topical medicaments can produce contact dermatitis.
- In our study antiseptics and NSAID's were most common groups producing Contact dermatitis followed by steroids and antibiotics.
- All cases were preventable according to Schumock's and Thornton scale.
- While many cases were found to be misdiagnosed or undiagnosed by the physician , so the Pharmacovigillance of the treatment and judicious use of medication is required.



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