

# Dermatology Medications Therapeutic Interchanges: A Narrative Reviews

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## ABSTRACT

**Objective:** To review the dermatology medications therapeutic interchanges therapy. **Methods:** It is an extensive search, or fifty databases comprised the following through the Saudi Digital Library (SDL) searching engine. It included the various types of studies (meta-analysis, randomized controlled studies and observational studies) in the English language with human study only for the update May 2017. The search in terms of therapeutic interchange, medication, therapy and type of disease or medication base on therapeutics class of anti-psychiatric. The medication list and switch from one drug to substitute based on the literature found the search that has included comparative safety, efficacy and cost of the type of medication for each disease and national or international evidence-based guidelines. **Results:** The total number of studies after an extensive search with a specific term search was 487 studies. Of those, there were 107 duplicated studies, and 380 studies included for future assessment. After assessment, 375 Records were excluded due to Non dermatology therapeutics interchange. Of the previous search, there were 5 studies that had been found discussed the dermatology medications therapeutic interchanges. **Conclusion:** There were few studies about medications used in skin disorder therapeutic interchange. It is better to start for generic substitutes and based on the international Therapeutic dermatology guidelines. **Key words:** Dermatology Medications, Therapeutic interchange, Initiative, System, Saudi Arabia.

## INTRODUCTION

The basic standards of healthcare institutions were medication hospital formulary that contained of medications list available 24/7 day inside the institutions and suitable for the patients. Various methods to keep the medications all the time obtainable inside healthcare institutions and one of the popular ways were therapeutic interchange system.<sup>1</sup> The system measured if the healthcare any medications not available for any reason, there is another medicines that replace it automatically. The system can be executed for all types of medications, including dermatology medications. The dermatology diseases need various duration of therapy from a few days to several months. The patients should obey to drugs until the disease recover. As a result, the concern medications or interchange should be available to target this goal. Few studies conducted on dermatology therapeutic interchange.<sup>2-6</sup> The majority of studies were the medications therapeutic interchange prevalence and used as alternative medications drove of therapeutic guidelines published in the litterateur as comparative medications and replace the drug of choice or second-line therapy.<sup>7-10</sup> The authors not familiar with any investigations about dermatology medications therapeutic interchange discussed locally or Gulf and Middle East countries. The aim of the current review is to explore the dermatology therapeutic interchange medications based on scientific evidence or international guidelines and employed in the Kingdom of Saudi Arabia.

## MATERIALS AND METHODS

It is extensive search or fifty databases included the following through Saudi Digital Library (SDL) searching engine; Willy online library, web of science, springer link, Taylor and Francis, Social Science Journal via ProQuest, Science Journal via ProQuest, Scopus, Scifinder, Science Direct, Sage Journal, Royal Society of Medicine, Royal Society of Chemistry, Psychology Journals via ProQuest. Pharmaceutical news index via ProQuest, Patient Education via MD consult, Drug via MD Consult, Oxford Journals via Oxford University, Ovid Journals, Nursing and Allied Health Sources via ProQuest, Nature Publisher group, Medline index via ProQuest, Medline complete via EBSCO, Medical Evidence Matter via ProQuest, IGI InfoSci Journals, Health Management via ProQuest, Health and Medical complete via ProQuest. Global Health Database-CABI, Family Health via ProQuest, Eric via ProQuest and EBSCO, Emerald, Dynamed via EBSCO, Directory of Open Access Journal (DOAJ), Current Content via Web of Knowledge, Dentistry and Oral Science via EBSCO, Clinical Key -Nursing, Clinical Key-Physician, CINAHL via EBSCO, Central via ProQuest, CBCA via ProQuest, Canadian Science Publishing, Cambridge Journals via Cambridge University, Britannica Academic, BMJ Journals, BMJ Clinical Evidence via BMJ Best Practice, BMJ Best Practice, Biology Journals via ProQuest, ACM Digital Library, Academic Search Ultimate

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via EBSCO, Cochrane Library Pubmed. In addition to Google, Scholar searched alone without SDL. It comprised the types of studies (meta-analysis, randomized controlled studies and observational studies) in the English language with human study only for the update May 2017. The search in terms of therapeutic interchange, medication, therapy and type of disease or medication based on therapeutics class. The medication list and switch from one drug to another based on the literature found the search that has included comparative safety, efficacy and cost of the type of medication for each disease and national or international evidence-based guidelines.<sup>7-10</sup> The Dermatology medication interchange list included drug name, general dosing and frequency. All settings of patient care services inpatient or ambulatory care or community services oral medication encompassed. All dosage form medication will include in the list. All medications should include the Ministry of Health formulary. The location of studies included Saudi Arabia as top propriety if hasn't existed Gulf or Middle East counties included, if not found overall counties included. If not existed, the table recommended from the author's experiences.

## RESULTS

The total number of studies after an extensive search with a specific term search was 487 studies. Of those, there were 107 duplicated studies, and 380 studies included for future assessment. After assessment, 375 Records were excluded due to Non dermatology therapeutics interchange. Of the previous search, there were 5 studies that had been found discussed the dermatology medications therapeutic interchnages. Two of them were review articles, and 3 were the prevalence of cross-sectional studies related to types of medications used in the therapeutic interchange system. All of the studies were not included for assessment because there were not fitted with research criteria (figure 1).

## DISCUSSION

Therapeutic interchange medication involved in several types of medications; for instance, cardiovascular medications, antibiotics, NSAIDs and gastric ulcer medications.<sup>2-6</sup> However, the employment of therapeutic interchange within dermatology disease is rare and most of the literature not discussed them. As a result, based on the author's knowledge, there are no studies that had not been done about dermatology therapeutic. However, most of the therapeutic interchange can be used during the international therapeutic guidelines of dermatology disease management.<sup>7-10</sup> Each dermatology disease

had several classes of management and each class had several medications. The disease had several equal options of management based on comparative efficacy and safety studies, but not therapeutic interchange studies. As a result, the authors and his colleagues recommended medications list of therapeutic interchange for dermatology medications (Table 1), that including the medications for infectious diseases of the skins orally or topically, topical steroid therapy, anti-allergies medications. All previous therapeutic interchange classes drove from international therapeutic guidelines. That keeps all the demand for medications for disease medications available all the time without missing any doses. Besides, using generic medications instead of the brand drug and using cheaper medications in each therapeutic lasses and subsequent saving significant cost for dermatology therapy then implement therapeutic interchange guidelines.<sup>6,11-14</sup> The dermatology therapeutic interchange is serious through the implementation of Saudi managed care pharmacy and new Saudi vision 2030.<sup>15,16</sup>

## CONCLUSION

Therapeutic interchange medications used for the dermatology section is not universal. There were few studies to authenticate it. Further studies demand to standardized medications therapeutic interchange used for skin diseases. However, therapeutic interchange in dermatology specialty is recommended to start accordingly to the international guidelines of skin disorders diseases.

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None.

## CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

## ABBREVIATIONS

MOH: Ministry of Health; KSA: Kingdom of Saudi Arabia; USA: United States of America; TI: Therapeutic Interchange; USD: United States Dollar; SDL: Saudi Digital Library.

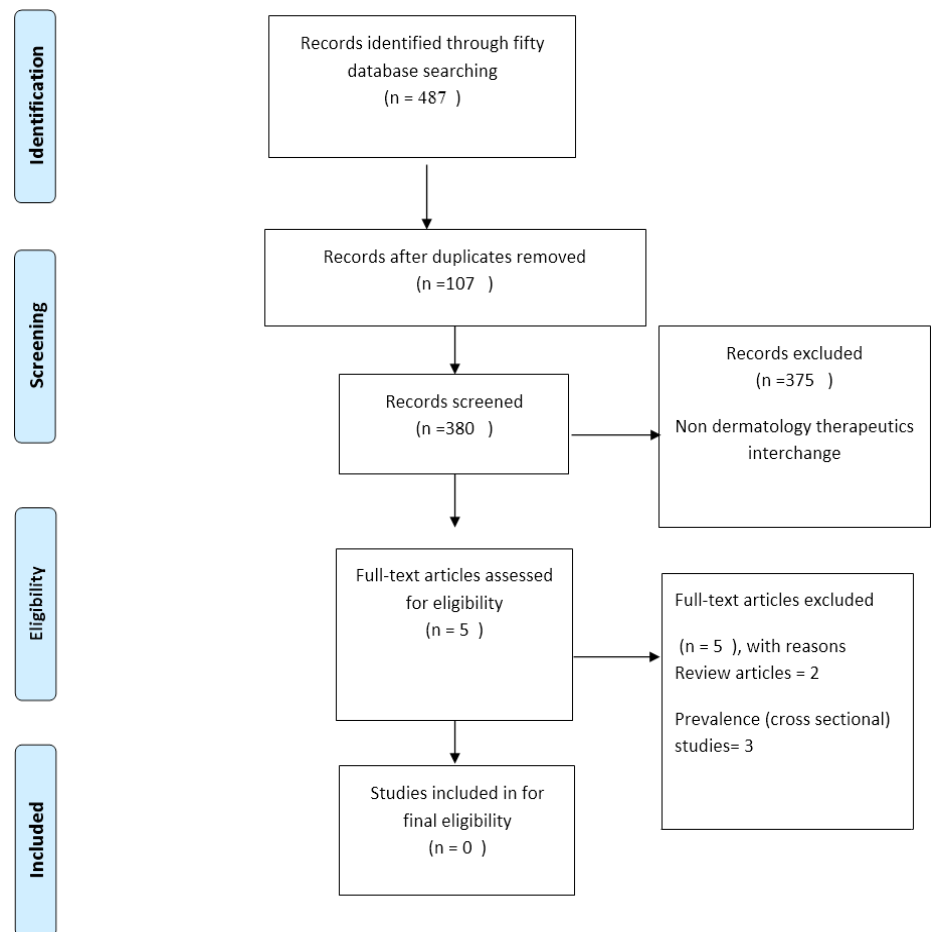


Figure 1: Results of searching the literature.

Table 1: Suggested Dermatology Medications therapeutic interchanges.						
No.	Ordered Drug or Interchange Drug (3)(7)(8)(9) (10)		Ordered Drug or Interchange Drug			Registration(9) (17)
1.	Betamethasone 750 mcg IV OR	repeated up to 4 times in 24 hours	4-20 mg	Betamethasone 750 mcg IV OR	4-20 mg	RSFDA
	Hydrocortisone 20mg IV OR	Divided in 3-4 doses	100-400	Hydrocortisone 20mg IV OR	100-400	RSFDA , MOHDF
	Methylprednisolone 4mg IV	daily	10-500 mg	Methylprednisolone 4mg IV	10-500 mg	RSFDA , MOHDF
2.	Prednisolone 5mg PO OR	In 1 dose	60-80 mg daily,	Prednisolone 5mg PO OR	60-80 mg daily,	RSFDA, MOHDF
	Betamethasone 750 mcg PO OR	daily	0.5-5 mg	Betamethasone 750 mcg PO OR	0.5-5 mg	RSFDA
	Dexamethasone 750 mcg PO OR	daily	0.5-10 mg	Dexamethasone 750 mcg PO OR	0.5-10 mg	RSFDA , MOHDF
3.	Methylprednisolone 4mg PO	daily	2-40 mg	Methylprednisolone 4mg PO	2-40 mg	RSFDA , MOHDF
	Hydrocortisone base or acetate 1% crm OR	as required	as required	Hydrocortisone base or acetate 1% crm OR	as required	RSFDA
	Hydrocortisone base or acetate 1.85% crm OR	as required	as required	Hydrocortisone base or acetate 1.85% crm OR	as required	(low potency) RSFDA
	Hydrocortisone base or acetate 2.5% crm	as required	as required	Hydrocortisone base or acetate 2.5% crm	as required	(low potency) RSFDA
	Betamethasone valerate 0.05% crm or oit	as required	as required	Betamethasone valerate 0.05% crm or oit	as required	(low potency) RSFDA
	Betamethasone dipropionate 0.05% crm OR	as required	as required	Betamethasone dipropionate 0.05% crm OR	as required	(low potency) RSFDA, MOHDF
4.	Hydrocortisone valerate 0.2% crm OR	as required	as required	Hydrocortisone valerate 0.2% crm OR	as required	(Intermediate potency) RSFDA, MOHDF
	Mometasone furoate 0.1% crm OR	as required	as required	Mometasone furoate 0.1% crm OR	as required	(Intermediate potency) RSFDA, MOHDF
	Betamethasone valerate 0.1% crm or oit	as required	as required	Betamethasone valerate 0.1% crm or oit	as required	(Intermediate potency) RSFDA, MOHDF
5.	Betamethasone dipropionate augmented 0.05% crm - oit OR	as required	as required	Betamethasone dipropionate augmented 0.05% crm - oit OR	as required	(Intermediate potency) RSFDA, MOHDF
	Triamcinolone acetonide 0.5% crm OR	as required	as required	Triamcinolone acetonide 0.5% crm OR	as required	(High potency) RSFDA, MOHDF
	Mometasone furoate 0.1% oit	as required	as required	Mometasone furoate 0.1% oit	as required	(High potency) RSFDA, MOHDF
6.	Clobetasol propionate 0.05% crm-oit OR	as required	as required	Clobetasol propionate 0.05% oint OR	as required	(High potency) RSFDA, MOHDF
	Betamethasone dipropionate, augmented 0.05% crm - oint	as required	as required	Betamethasone dipropionate, augmented 0.05% oint	as required	(Very High potency) RSFDA, MOHDF

Note: crm: cream, oint: ointment

The prescriber should adjust the dose after interchange according to the patient condition

RSFDA: The Drug had been registered in Saudi Food and Drug Authority, MOHDF: The Drug is Ministry of Health Drug Formulary

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**REFERENCES**

1. Carroll NV. Formularies and therapeutic interchange: The health care setting makes a difference. *Am J Heal Pharm.* 1999;56(5):467-72.
2. Schachtner JM, Guharoy R, Medicis JJ, *et al.* Prevalence and cost savings of therapeutic interchange among U.S. hospitals. *Am J Heal Pharm.* 2002;59(6):529-33.
3. Oh T, Franko TG. Comprehensive therapeutic interchange program in a community hospital. *Am J Hosp Pharm.* 1991;48(7):1471-7.
4. Carroll NV. Therapeutic interchange in community pharmacies in Virginia. *Am J Heal Pharm.* 2000;57(9):882-6.
5. Eurich D, Poulin S, Semchuk W, *et al.* Therapeutic interchange in Canadian hospitals: A national survey. *Can J Hosp Pharm.* 2001;54(1):28-34.
6. Gray T, Bertch K, Galt K, *et al.* Guidelines for therapeutic interchange. *Pharmacotherapy.* 2005; 25(11):1666-80.
7. Wells BG, DiPiro JT, Schwinghammer TL, *et al.* *Pharmacotherapy Handbook.* Ten Edition. 2017;1187.
8. Baxter K, Aikman K, Luckhurst R, *et al.* British National Formulary 78 (BNF). Royal Pharmaceutical Society. 2003;1-1701.
9. Ministry of Health. Ministry of Health Formulary. 2012.
10. Afifi T, Gannes GD, Huang C, *et al.* Topical therapies for psoriasis. *Can Fam Physician.* 2005;51(4):519-25.
11. Mills EJ, Gardner D, Thorlund K, *et al.* A users' guide to understanding therapeutic substitutions. *J Clin Epidemiol.* 2014;67(3):305-13.
12. Wall DS, Abel SR. Therapeutic-interchange algorithm for multiple drug classes. *Am J Heal Pharm.* 1996;53(11):1295-6.
13. Holmes DR, Becker JA, Granger CB, *et al.* ACCF/AHA 2011 Health Policy Statement on Therapeutic Interchange and Substitution. *Circulation.* 2011; 124(11):1290-310.
14. Compendium AMAP, Vol HP, Ama T. AMA policy on drug formularies and therapeutic interchange in inpatient and ambulatory patient care settings. *Am J Hosp Pharm.* 1994;51(14):1808-10.
15. Alomi YA, Alghamdi SJ, Alattyh RA. Saudi Managed Care Pharmacy (SMCP): New initiative system of MOH Prescriptions Dispensed Through Community Pharmacies. *J Pharm Pract Community Med.* 2017;3(3):145-53.
16. Alomi YA. New Pharmacy Model for Vision 2030 in Saudi Arabia. *J Pharm Pract Community Med.* 2017;3(3):194-6.
17. Saudi Food and Drug Authority. List of human medicine and herbal health. 2019. Cited 2019 Jun 17. Available from: <https://www.sfda.gov.sa/en/drug/resources/Pages/DrugsUnderRegistrations.aspx>.