



MEDICAL ASSESSMENT OF LOCAL-MADE PHARMACEUTICAL PREPARATIONS IN THE LIBYAN MARKET

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Access this article online

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DOI:
<http://dx.doi.org/10.21276/ijap.2020.10.1.1>

Received:24.08.19

Revised:12.09.19

Accepted:24.09.19

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ABSTRACT

At the zone of Tripoli city in Libya, 36 community pharmacies were randomly selected for this survey. The purpose of conducting this survey is to know the availability of Local-made pharmaceutical preparations in the market, their therapeutic use, manufactures, its acceptance by patients, how it is prescribed by physicians and, if any, the observed adverse reactions. The results of the questionnaire show a number of the Local-made pharmaceutical preparations available in the market. The findings reveal that most of these preparations are accepted by patients (40 – 80 %). It was noticed that information like shelf-life, precautions, and methods of use were not given by manufacturers. The findings of the questionnaire, which were collected from physicians, show that a number of such preparations are being prescribed by doctors to their patients. Their experience confirms that most of these preparations are accepted by patients (40 – 100 %) and some gave satisfactory clinical results. Also, some side-effects include inflammation, irritation, and color staining are seen clinically by physicians. In conclusion, The Libyan-made pharmaceutical preparations are effective with little side-effects, but at the same time there is a lack of the necessary information which should be available to the health professionals as well as patients. Although such preparations are in use for a long time at the local market, the emphasis on organizing and developing their protocol of designing to produce a satisfactory preparation is needed.

Keywords: Libyan-made, pharmaceutical preparations, Libyan drug manufacturers, Libya.

INTRODUCTION

Local production of pharmaceutical preparations may be important for increasing the independence of developing countries and enhancing self-reliance, participation, knowledge and experience [1-9]. Recently, the WHO has revived its interest in the local production of medicines, vaccines and other medical products [10]. Local production may be cheaper and can be implemented stepwise, starting with packaging and simple preparations, and may help increase access to essential medicines [11]. Dependence on industrialized countries may persist even when drugs are locally produced. Clearly, dependence will not disappear overnight, but the issue can be tackled.

If no action is taken towards the development of local production, it will most certainly not happen. Local production may play an important role, especially in the long run, in reducing cost and dependence on other countries, enhancing self-reliance and reaching as many people as possible[12]. Quality assurance is also crucial for both locally produced and imported drugs [13]. Even ideal drugs are effective and safe only when they are prescribed and used correctly. Good information, both written and visual, should take full account of the local situation, customs and should, therefore, be locally created. Additionally, information is best provided on the packaging, more specifically, the primary packaging as it

remains close to the product [14, 15]. The objective of this work is to assess the local production of local pharmaceutical preparation in Libya.

MATERIALS AND METHODS

The present work was focused mainly on the Libyan-made pharmaceutical preparations and their utilization by the health care professionals and was carried out through the following steps:

Survey in the community pharmacies

At the zone of Tripoli city, around 36 private pharmacies were randomly selected for the purpose of conducting this survey. Questionnaire-I was used to carry out this survey and was designed to know the availability of local-made pharmaceutical preparations in the Libyan market, their therapeutic use, name of manufactures and its acceptance by patients.

Survey among physicians

Questionnaire-II was directed to physicians, working in both private and public sectors at the zone of Tripoli city. The purpose of conducting this survey is to investigate the prescribing of Libyan-made pharmaceutical preparations by physicians. Also, the acceptance of such preparations by patients and, if any, the observed adverse reactions are also investigated.

RESULTS AND DISCUSSION

From the survey (Questionnaire I), a list of the Libyan-made pharmaceutical preparations available in the private market and its relevant information is presented in Table (1).

Information like shelf-life neither it is written on the label nor it is mentioned by pharmacists. In addition, no special comments by the pharmacists were given. From the survey (Questionnaire-II), a list of the Libyan-made pharmaceutical preparations prescribed by physicians (dermatologists) to their patients is tabulated in Table 2. Other information collected includes percentage of accepting these preparations by their patients and side-effects noticed by physicians were also included in Table 2. From studies carried out at private pharmacies (Questionnaire-I) and among some of physicians (questionnaire-II), it is obvious that although the Libyan-made pharmaceutical preparations are available since a long time, it seems no proper concern was given to these

important range of drug formulations from both the manufacturers and the state industry.

Considering the collected data given and the preparations found on-sale in pharmacies (Table 1), it is clear that there is a lack of information which is of a great value to pharmacy profession and accordingly the pharmacist bear a heavy responsibility in learning about them and to introduce them to the rest of the health professionals particularly physicians as well as patients as some of such preparations given without prescription. It was noticed that information like shelf-life, processes, methods of use etc., were not given by manufacturers. Some pharmacists mentioned that the Libyan-made pharmaceutical preparations have well known advantages in terms of therapy and price over the conventional ones particularly for patients whom require multiple dosing for a long period of time. They also added that physicians prescribe such preparations frequently. Questionnaire II, reveals only a short list of Libyan-made pharmaceutical preparations prescribed by them (Table 2). Many clinicians are unassisted by the necessary information with these preparations. Physicians mentioned that the most frequent problem they face with their patients concerning the Libyan-made pharmaceutical preparations is the continuously short-supply of these preparations. Moreover, the unknown sources are one of the problems which make physicians confused sometimes, particularly in the absence of the necessary information which should be made available from the manufactures. Some physicians would hope that these preparations continue to exist in the market but it is most important, more than any time ago, to establish a state quality control in order to evaluate these preparations on scientific basis. They emphasized that the use of these products seeks some sort of an official form to be legally prescribed, distributed and used by patients. Although that these preparations are prescribed by physicians to their patients, only few of them showed no adverse effects. Preparations such as potassium permanganate crystal, emulsifying ointment and salicylic acid ointment were 100 % accepted by patients with no side-effects. With exception of salicylic acid paint, Tar salicylic acid ointment and Lidane which are very irritant and not accepted by patients, the rest of preparations listed in Table (2) are well accepted by patients (40 – 80 %) and prescribed by physicians. Side-effects that were noticed by physicians include inflammation, color staining, dryness, irritation, and for some preparations very irritant.

Table 1. Libyan-Made Pharmaceutical Preparations Available in Private Pharmacies

S. N	Preparation Name	Made by	Active ingredient	Therapeutic use	acceptance by patient*
1	¹ Emulsifying ointment	Chemolib	Emulsifying, wax, white soft paraffin	Emollient, ointment base	40 – 80 %
2	² Salicylic acid ointment 2% and 3%	Chemolib	Salicylic acid	Anti-inflammatory and in treatment of acne	60 – 80%

3	² Salicylic acid ointment 30% and 40%	Chemolib	Salicylic acid	Keratolytic in case of corns and warts	60 – 80%
4	¹ Tar Salicylic acid ointment	Chemolib	Tar, Salicylic acid	Antiallergenic for treatment of eczema	40 - 60%
5	¹ Zinc castor oil ointment	Attadamen	Zinc oxid castor oil	Soothing and protective application in eczema	60-80%
6	² Zinc oxid 10% cream	Attadamen	Zinc oxid	Skin protection against U.V radiation	40-60%
7	² Urea ointment	Attadamen	Urea cream base	Emollient for dry skin, morbidement	60-80%
8	¹ Alopecia liquid	Attadamen	Acetic acid	For alopecia	60-80%
9	² K A N massage 10%	Attadamen	Methyl salicylate, white paraffin	Rheumatism, muscular contraction	40-60%
10	¹ Trichloroacetic acid	Attadamen	Trichloroacetic acid	Keratolytic	40 – 60%
11	¹ Dithranol ointment	Chemolib	Dithranol yellow soft paraffin	Subacute and chronic psoriasis	40-60%
12	¹ Hydroquinon cream 4%	Chemolib	Hydroquinon	Elimination of trace dark color of skin as acne freckles	40-60%
13	² Antiarrosament cream	Attadamen	Zinc oxid, castor oil with petroleum	Burns and rash	40-60%
14	¹ Antiverrughe liquid “sulactol” 5%	Attadamen	Salicylic acid lactic acid colloidion	For warts	40-60%
15	² Vicks vaporub 2%	Attadamen	Methyl salicylat, camphor, menthol	Anti-inflammatory, soften	60-80%
16	¹ Boric Vaseline	Attadamen	Boric acid, white petroleum jelly	Anti-bacterial, softness	60-80%
17	² Calamin lotion 10%	Al-fatah lab	Calamin, zinc oxid, bentonit 3% calcium hydroxide	For rash	60-80%
18	² Ichthammol ointment 10 %	Attadamen	Ammonium sulpho-Ichthyolate	For warts	60-80%
19	¹ Potassium permengat 1:8000	Attadamen	Potassium permengat	Skin infection “antifungal”	80-100%
20	² Sulfur ointment 3%	Attadamen	Precipitated sulfur	For cane, eczema	40-60%
21	¹ Betadin “povidon-Iodin solution 10%”	Al-fatah lab	Povidon-Iodin 10%	Disinfectant for skin and scalp	60-80%
22	¹ Panthenol lotion 2%	Chemolib	Danthrenol “pantothonic acid”	Minor skin disorder	60-80%
23	¹ Medicated spirit	Chemolib	Spirit	Skin preparation before injection	80-100%
24	¹ Tincture benzoin compound	Chemolib	Tincture balsamic acid 4.5%	Relief of nasal obstruction in acute rhinitis comforting in bronchitis	60-80%
25	¹ Silver nitrate solution 20%	Chemolib	Silver nitrate	Warts and calluses	60-80%
26	² Eosin aqueous 1%	Chemolib	Eosin, Alcohol	Disinfectant, antifungal	40-60%
27	¹ Gentian violet	¹ T.M.C lab	Crystal violet	Disinfectant in skin infection	60-80%
28	¹ Mercurochrome 2%	Africa medical lab	Merbromin	Disinfectant for minor wounds and also after operation as dressing	20-40%
29	² Antimicotic solution	Attadamen	Chotrimazolpowde	Antifungal	60-80%

30	¹ Eusol solution	T.M.C lab	Boric acid, potassium hypochlorid	Disinfectant, diabetic foot	60-80%
31	¹ Castellani's paint	Attadamen	Fucina basic, phenol, acetone	Superficial fungal infection especially when moist eczematous dermatitis	60-80%
32	² Lindane Application	Chemolib		Anti-lice and nits affecting the scalp and relief rash of skin and scalp	80-100%
33	² Glycerin solution	Africa medical lab	Glycerin	Softness and hydration of skin	80-100%
34	² Glycerin borax solution	Attadamen	Glycerin borax	Mouth ulcer and softens	80-100%
35	¹ Minoxidil liquid 2%	Attadamen	Minoxidil	Hair tonic, Alopecia	40-60%

*according to physician experience, ¹given with prescription, ²given without prescription, ³T.M.C lab is Tripoli Medical Center Lab.

Table 2: The Libyan-made pharmaceutical preparations prescribed by physicians.

S.N	Preparation Name	Acceptance by patients*	Side-effects*
1	Alopecia liquid	80 %	Irritation
2	Bethedine	80 %	Color staining
3	Calamine lotion	75 %	Irritation, Dryness
4	Coastline's paint	70 %	Rarely irritant, Color staining
5	Dithranol	40 %	Inflammation, Color staining
6	Emulsifying ointment	80 %	None
7	Gentian violet paint	75 %	Color staining
8	Hydroquinon ointment	20 %	Inflammation
9	Lidane	0 %	Very irritant
10	Oil of bergamot	70 %	Rarely irritant
11	Podophyllin	80 %	Inflammation, Color staining
12	Potassium permanganate	100 %	None
13	Salactol paint	10 %	Irritation
14	Salicylic acid ointment	90 %	Inflammation
15	Sulfur ointment 10%	80 %	Irritation
16	Tar salicylic acid ointment	1 %	Irritation
17	Tricoloro acetic acid	60 %	Irritation
18	Urea cream	60 %	Irritation
19	White field ointment	60 %	Rarely irritant, Inflammation
20	Sulfur ointment 2%	80 %	Irritation
21	Zinc oxide ointment	50 %	Irritation, Cosmetically not accepted

*according to physician's experience.

CONCLUSION,

The Libyan-made pharmaceutical preparations are among the important categories of drug therapy. The results of the present study reveal that the Libyan-made pharmaceutical preparations are effective with little side-effects, but at the same time there is a lack of the necessary information which should be available to the health professionals as well as patients. Although the Libyan-made pharmaceutical preparations were for a long time in use at local market, the emphasis on organizing and developing their protocol of designing to produce a

satisfactory formulation is needed. For all Libyan-made pharmaceutical preparations used in the country, the involvement of state quality control is the most important step to be taken for more effective, safe and satisfactory drug therapy.

ACKNOWLEDGEMENT

None

CONFLICT OF INTEREST

Nil.

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