

Acute toxicity's survey of the MISCA-MATÈS soap

THES Pehie Marie Epse SOUMAHORO¹, OUATTARA Sitapha¹, KPOROU Kouassi Elisée¹⁻², KRA Adou Koffi Mathieu¹, and DJAMAN Allico Joseph¹⁻³

¹Biochemical Pharmacodynamics laboratory, University Felix Houphouët Boigny, Côte d'Ivoire

²Biochemistry-Microbiology laboratory, BIONAS Team, University Jean Lorougnon Guédé, Côte d'Ivoire

³Biochemistry Medical and Fundamental, Pasteur institute of Cocody, Côte d'Ivoire

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ABSTRACT: We studied the cutaneous MISCA-MATES toxicity soap humans. The test of irritation at the man is indispensable to specify the potential irritating power of some better cosmetic preparations. Thirty soaps of MISCA-MATÈS experimentation were delayed on thirty voluntary people. Two methods have been used. The first consists in applying a quantity of soap foam on the hand of the volunteers during 24 hours. The test has been repeated at the same place during 7 days except if an erythema develops in which case the test is stopped. The treatment has not been interrupted after the 7 days of experimentation. The second method consists in distributing to each volunteer a soap for the bath during 7 days and we noted the effects which could produce the soap on their respective skins. The analysis shows that one person out of thirty (3.33 %) felt a slight burn when applying soap while twenty nine persons (96.67 %) felt no burn.

KEYWORDS: toxicity, erythema, MISCA-MATÈS soap.

1 INTRODUCTION

Skin is the first protective gate of the organism which is composed of several layers of fabrics. The integrity of skin can be affected by external agents, like a pathogenic microorganism's colonization, bugs or parasitic, changes provoked by stings, burns, a traumatism or by a systemic affection. Nowadays, having a clearer dye, uniform and luminous is an obsession of many women. However, the use of clearing up cosmetic products fraudulent is dangerous for health.

In the goal to bring a contribution against cutaneous mycosis, a dermo- pharmaceutical soap associating the oils of the plants from *Mareya micrantha*, *Mitracarpus scaber* and *Cassia alata* is manufactured. These plants are used in African pharmacopeia ([1], [2]). Pharmacological and toxicological studies of these plant extracts were done by ([3], [4], [5]). In the same way, antibacterial activities of these plants have been studied by several authors ([6], [7], [8]). Acute toxicity and subacute studies of these plants extracts made ([9], [10]) showed that these substances are moderately toxic. However in the goal to popularize the use of this dermo- pharmaceutical soap in the therapeutic human, it is important to achieve tests of cutaneous toxicity in order to determine the possible side-effect of this soap on skin. The present tests of irritation at the human will give the tolerance level of these plants and will direct their use.

2 MATERIAL AND METHODS

The determination of MISCA-MATÈS soap irritating power has been achieved through two methods: Dermatological irritation tests of the forearm and the irritation tests after 7 days of bath. These tests have been approved by the of ethics committee of Biosciences UFR of Felix Houphouët-Boigny university.

2.1 FIRST METHOD: FOREARM DERMATOLOGICAL IRRITATION TESTS

Thirty volunteer persons have been selected for this present test. We applied 0.5 grams of soap on the forearm of each volunteer. The soap was maintained on the skin thanks to a bandage of sterile absorbent gauze (four thickness) followed by an occlusive covering with a 8 cm broad adhesive plaster on 9 cm length. The application and the occlusive bandage started at 12.00 PM and finished at 15.00 PM a day (**figure 1 & 2**). After the bandage withdrawal, the zone was washed with water, wiped and the bandage was applied after a new soap application during 7 consecutive days. A visual appreciation of the reactions intensity permitted after the 7 days to value the irritation importance (PRUNIERAS et Coll.,1990).



a. Forearm skin before the soap application



b. Forearm skin during the soap application

Fig. 1. Forearm skin aspect before and during the MISCA-MATÈS soap application on the first volunteer



a. Forearm skin before the soap application



b. Forearm skin during the soap application

Fig. 2. Forearm skin aspect before and during the MISCA-MATÈS soap application on the second volunteer

2.2 SECOND METHOD: IRRITATION AFTER A BATH OF 7 DAYS

Each volunteer had a bath with the MISCA-MATÈS soap during 7 days. A card of questions was given to note the effects which could produce the soap on their respective skins.

3 RESULTS

3.1 FIRST METHOD: FOREARM DERMATOLOGICAL IRRITATION TESTS



Fig. 3. Forearm skin aspect 7 days after MISCA-MATÈS soap application on the first volunteer



Fig. 4. Forearm skin aspect 7 days after MISCA-MATÈS soap application on the second volunteer

Any anomaly was observed after 7 days on the two volunteer skin.

3.2 SECOND METHOD: IRRITATION AFTER A BATH OF 7 DAYS

Table 1. Effects after MISCA-MATÈS soap application

Burns since the soap application	YES	NO
Number	1	29
Frequency	3.33%	96.67%

Table 2. Effects during the bath

C Cutaneous burns during the bath	YES	NO
Number	1	29
Frequency	3.33%	96.67%

Table 3. Effects after the bath

C Cutaneous burns after the bath	YES	NO
Number	2	28
Frequency	6.67%	93.33%

Table 4. Itching's feelings since the MISCA-MATÈS soap application

C Itchings since the MISCA-MATÈS soap application	YES	NO
Number	1	29
Frequency	3.33%	96.67%

Table 5. Itching's feelings of the MISCA-MATÈS soap application during the bath

C Itching's feelings of the MISCA-MATÈS soap application during the bath	YES	NO
Number	1	29
Frequency	3.33%	96.67%

Table 6. Itching's feelings of the MISCA-MATÈS soap application after the bath

C Itching's feelings of the MISCA-MATÈS soap application after the bath	YES	NO
Number	3	27
Frequency	10%	90%

Table 7. Other cutaneous trouble

C Other cutaneous trouble	Dry skin or heat	None
Number	2	28
Frequency	6.67%	93.33%

Table 8. Smell

	Sneeze	Nasal flow	Nostrils itchings	Nostrils burn	Nothing
Number	1	1	1	0	27
Frequency	3.33%	3.33%	3.33%	0%	90 %

Table 9. Sight

	Itchings	Burn	Tears	Red eyes	Nothing
Number	2	0	0	0	28
Frequency	6.67%	0%	0%	0%	93.33%

Table 10. Hairs

	Curly	Little curly	Hard	Breakable	Intacts
Number	0	1	0	0	29
Frequency	0%	3.33%	0%	0%	96.67%

Table 11. Sensation after the bath

	Good	Bad	Allery	Others
Number	27	1	0	2
Frequency	90%	3.33%	0%	6.67%

4 DISCUSSION

In this survey, we wanted to know the effects that soap could produce on the skin after the use. With regard to the direct application on the skin, the thirty volunteers didn't feel any irritation. Their skin supports well the direct contact with the MISCA-MATÈS soap and that it is not contain any chemical ingredient apt to modify the skin's pH or to lead to a physical or chemical aggression. For the thirty volunteers who washed with soap, we also searched for the inflammatory sign apparition

(burns, itches) or not (troubles, discomforts) concerning the nose, the eyes, hairs and the general sensation. The thirty people have been chosen at random. We didn't take into account the skin type (dries, mixed and fat) nor of the color (black or white).

The analysis of the set of the information introverted shows that one person out of thirty (3.33%) felt a light burn since the soap application whereas (twenty nine) people either 96.67% felt no burn. During the bath, one person notified to have felt some burns whereas (29) were satisfied. After the bath, the rate of no one having smelled like no burn is 93.33%. These results make come out again that, in a general way, the MISCA-MATÈS soap doesn't irritate skin. For the itches felt (sensation of itch), the rate of satisfaction is 96.67% during the bath and 90% after the bath. The soap doesn't produce any allergic reactions.

With regard to the general sensation, twenty seven volunteers (90%) are declared that they felt well on the other hand 10% were not satisfied, either because of dry skin (two cases) or of uneasiness (a case) after the bath with soap. For the non-inflammatory sign level, it comes out again that 90% of the volunteers have been satisfied with the soap odor and didn't feel nasal flow, nor burns and itches. As for the action of the MISCA-MATÈS soap on the eyes, the frequency of the person who were not satisfied was 93.33%. On the other hand, two people received the soap foam in the eyes and complained about itches. Finally, the analysis concerning the soap effect on hairs reveals that 96.67% of the volunteers didn't feel any change at the level of the scalp. All these observations indicate that soap is not aggressive and is tolerated well by the human's skin.

5 CONCLUSION

This survey aimed to value the soap toxicity on the volunteer's skin. Studies of cutaneous tolerance showed that MISCA-MATÈS soap doesn't present any undesirable effect. The human skin supports the direct contact well with the MISCA-MATÈS soap and this last would not contain any chemical ingredient apt to disrupt the skin pH or to mislead a physical or chemical aggression. The MISCA-MATÈS soap doesn't entail any deep and deleterious lesion on the skin. The soap doesn't produce any allergic reactions.

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ANNEXE

LE QUESTIONNAIRE

Nom
Prénom
Numéro

Signes inflammatoires

- Sentez-vous des brûlures dès l'application du savon « MISCA-MATÈS » sur votre peau ?

Oui

Non

- Sentez-vous des brûlures cutanées pendant le bain ?

Oui

Non

- Sentez-vous des brûlures cutanées après le bain ?

Oui

Non

Si oui, après combien de temps ?

Démangeaisons

- Ressentez-vous des démangeaisons dès l'application du savon « MISCA-MATÈS » sur votre peau ?

Oui

Non

Si oui, comment ?

Fortes très fortes faibles localement

Généralement

- Ressentez-vous des démangeaisons pendant le bain ?

Oui

Non

- Ressentez-vous des démangeaisons après le bain ?

Oui

Non

Si oui, après combien de temps ?

La manifestation: locale générale faible forte

Très fortes

Autres désagréments cutanés :

Autres signes non cutanés

- Odorat

Quels effets sont-ils provoqués pendant et après l'utilisation du savon «MISCA-MATÈS »?

Éternuement écoulement nasal démangeaisons des narines

Brûlure des narines rien

- Vue

Quels effets sont-ils provoqués pendant et après l'utilisation du savon «MISCA-MATÈS »?

Démangeaison brûlures larmes

yeux rouges rien

- Cheveux

Frisés peu frisés durs

se cassent rien

- Comment vous sentez-vous après le bain?

Bien pourquoi

Mal pourquoi

Allergie laquelle

Autres définir