

<原 著>

ゲル基剤の特性に関する研究

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Studies on the Characteristics of Gel Products of Cosmetics and Topical Medicaments

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Abstract

In order to clarify the characteristics and indications of the gel products both of cosmetics and topical medicaments, their skin irritancy, feelings at usage, the water content of the horny layer and the quantity of skin surface lipid after application were examined. The differences between the skin irritancy, the water content of the horny layer and the quantity of skin surface lipid at the sites of the patch test with 48 hours closed and open methods were also studied. The following results were obtained.

- 1) Among the gel products of cosmetics, water soluble polymer gel products showed the highest skin irritancy indices.
- 2) The skin irritancy indices of steroid gels showed more than 20, and the irritant reactions became stronger at 72 hours' reading. The main cause was supposed to be due to the high concentrations of propylene glycol included in the vehicles.
- 3) Non-steroidal anti-inflammatory agent gels had very high skin irritancy indices, but one of the vehicle tested showed rather low skin irritancy index. This results implied that this high skin irritancy indices may be due to the pharmaceutical effect of the non-steroidal anti-inflammatory agent but not due to the irritancy of the vehicle.
- 4) Among the gel products, the water soluble polymer gel products of cosmetics showed fairly good feelings at usage and did not influence on the quantity of the skin surface lipid but increased moderately the water content of the horny layer.
- 5) When the gel products of topical medicaments were applied to the skin surface, in most of the cases, the water content of the horny layer was much increased in the early phase after application but was decreased rapidly.
- 6) Tingling sensation at usage always appeared with refreshing feeling. Therefore, the irritant sensation seemed to be concealed in the feeling of refreshment.
- 7) Among the gel products, there existed a good correlation between the skin irritancy indices of 48 hours closed patch test and open patch test evaluated at 20 minutes' reading.
- 8) There were no statistically significant correlations among the degrees of the irritant reactions by 48 hours closed patch test and open patch test, the water content of the horny layer and the quantity of the skin surface lipid of the patch tested sites.
- 9) If the water soluble polymer gels of cosmetics are properly advised to use such as using only in summer, the good feelings at usage may be appreciated.
- 10) The gel products of topical medicaments seem to have room for improvement in the point of safety, and they should be selected and used properly in consideration of what kinds of diseases they should be used for and how and where they should be applied.