Proceedings of the Tricontinental Symposium on Autoimmune Skin Diseases

Dermatology 1994;189(suppl 1):131-132

A Retrospective Analysis of Tissue-Fixed Immunoreactants from Skin Biopsies Maintained in Michel's Medium

S.A.V.	Vaughan	Jones
J.		Salas
J.A.		McGrath
I.		Palmer
B.S.		Bhogal
M.M.		Black

Department of Immunofluorescence, St. John's Institute of Dermatology, London, UK

Key Words

Michel's medium
Immunofluorescence
Pemphigoid
Pemphigus
Lupus erythematosus
Dermatitis herpetiformis

Abstract

656 skin biopsies with positive direct immunofluorescence from the UK and overseas were studied over a 2-year period. The length of time biopsies had remained in Michel's medium at pH 7.0 in various diseases (pemphigoid, pemphigus, linear IgA disease, epidermolysis bullosa acquisita, lupus erythematosus, vasculitis, amyloid, lichen planus and dermatitis herpetiformis) was analysed. We concluded that direct immunofluorescence remained positive at 6 months and that Michel's medium is a reliable long-term maintenance medium for skin biopsies.

Dr. S.A. Vaughan Jones, Department of Immunofluorescence, St. John's Institute of Dermatology (UMDS), St. Thomas' Hospital, London SE1 7EH (UK)

Introduction

Michel's medium [1] is now generally accepted as the transport medium of choice to maintain tissue-fixed immunoreactants prior to direct immunofluorescence. Its introduction has enabled us to study specimens from all over the UK and overseas. Michel et al. [2] showed that the intensity of immunofluorescence is identical when comparing results of biopsies processed using liquid fixative and a standard snap-freezing method. The immunofluorescence laboratory at St. John's Institute receives specimens from overseas countries (including Sri Lanka, India, Spain, Turkey, Poland and Kenya). Usually biopsies are in transit for up to 2 weeks. However, occasional delays in the post have resulted in specimens remaining in Michel's medium for more than 2 weeks prior to analysis by direct immunofluorescence.

Our aim was to design a retrospective study over a 2-year period to determine the length of time the biopsies from patients with various auto-immune dermatoses can be maintained in Michel's medium.

Materials and Methods

A retrospective study was carried out by analysing 656 positive direct immunofluorescence specimens which correlated with the clinical and histological findings of 9 specific dermatoses. Biopsies were studied which had been sent to our laboratory in Michel's medium from the UK and overseas over a 2-year period. All specimens were maintained at room temperature and at

pH 7.0. Diseases included in this study were pemphigus, pemphigoid, linear IgA disease, epidermolysis bullosa acquisita, lupus erythematosus, dermatitis herpetiformis, vasculitis, amyloid and lichen planus/lichenoid eruption.
The samples were grouped according to the number of weeks they had been maintained in Michel's medium. The time was measured from the date biopsies were taken to the date analysed by direct immunofluorescence (table 1).
Results
The majority of specimens, i.e. 90% (592/656), were received within 1-2 weeks. However, when there were delays in the postal system, especially from overseas countries (which included India, Kenya, Poland and Sri Lanka), the biopsies were in Michel's medium for 2-4 weeks.

1018-8665/94/1897-0131
$5.00/0
Table 1. The time in weeks biopsies had been in Michel's medium
Disease
Time in weeks

1-2
2-4
4-8
12-16
16-24

In one particular instance 5 biopsies (2 pemphigus, 1 linear IgA, 1 pemphigoid and 1 epidermolysis bullosa acquisita were left in Michel's medium for 6 months. In biopsies maintained in Michel's medium for over 4 weeks there was occasional separation through the dermo-epidermal junction but this did not interfere with the pattern of immuno-fluorescence.
Discussion
Our study was only a retrospective one. A previous study by Skeete and Black [3] suggested that after long intervals in Michel's medium the intensity of fluorescence might become absent in some cases where snap-frozen sec-
tions were positive. This tends to occur because catabolism of blood and serum proteins produces a drop in the pH of the medium. The problem has now been overcome by washing biopsies in either normal saline or distilled water prior to transportation in Michel's medium. Our study clearly demonstrates that direct immunofluo-rescence still produces reliable results in specimens maintained in Michel's medium for up to 6 months in a variety of autoimmune dermatoses. The implications of our results are obvious. In countries where direct immunofluorescence is not readily available, preservation of specimens in Michel's medium is a reliable method for transportation of skin biopsies prior to analysis. Further studies are now in progress to determine the maximum length of time the biopsies can be maintained in Michel's medium.
References
Morel P, Bouaziz G, Cívatte J: Immunofluorescence cutanée: intérêt du fixateur liquide à base de sulfate d'ammonium (B. Michel et coll.). Ann Dermatol Venéréol (Paris) 1979; 106: 301-302.

Michel B, Milner Y, David K: Preservation of tissue-fixed immunoglobulins in skin biopsies of patients with lupus erythematosus and bullous diseases: Preliminary report. I Invest Dermatol 1973:59:449-452.
Skeete MVH, Black MM: The evaluation of a special liquid fixative for direct immunofluorescence. Clin Exp Dermatol 1977;2:49-56.