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LIVER BIOPSY IN PSORIATICS PREVIOUSLY TREATED WITH POTASSIUM ARSENITE

A Controlled Study

H. Zachariae, H. Søgaard and A. Nyfors

From the Departments of Dermatology, Finsen Institute, Copenhagen, and Marselisborg Hospital, University of Aarhus, and the Department of Pathology, Aarhus Kommunehospital, Aarhus, Denmark

Abstract. Liver biopsies from 44 psoriatics previously treated with potassium arsenite were compared with liver biopsies from 37 psoriatics who had never received arsenic. All biopsies were from patients with severe psoriasis considered for Methotrexate treatment and were taken prior to treatment. Pathological histological findings were common in both groups of psoriatics. However, no statistical differences could be demonstrated between the groups. No cases of cirrhosis were demonstrated. One patient previously treated with arsenic showed signs of multifocal liver cancer.

Liver damage is a not-uncommon finding in chronic arsenic poisoning and cirrhosis may arise from the hepatotoxic action (3). Lately, several investigators have reported an increased incidence of pathological findings in liver biopsies from psoriatics investigated prior to or following Methotrexate treatment (1, 2, 4, 6–12). As a number of these patients may have been treated for their psoriasis with potassium arsenite, their liver abnormalities might partly be due to inorganic arsenic. We have therefore re-evaluated our liver biopsies performed on psoriatics prior to Methotrexate treatment in order to elucidate whether prior treatment with potassium arsenite could be responsible for the abnormalities reported (6, 7, 11, 12).

MATERIAL AND METHODS

The investigations were carried out on liver biopsies from 44 psoriatics who had received potassium arsenite for their skin disease from 6 months to 48 years earlier, and on biopsies from 37 psoriatics who had never been treated with organic arsenic. All were patients with severe psoriasis considered for treatment with Methotrexate, but none had received the drug before the biopsy was taken. A number of the patients treated with arsenic suffered from either arsenic keratosis or skin cancer. One patient had hypermelanosis of the skin.

All biopsies were obtained by the Menghini technique (5). Microscopic examination of the biopsies was made by one of us (H. S.) without knowledge of the clinical data. Fatty infiltration, periportal inflammation, nuclear variability, focal necrosis, cholestasis, fibrosis and cirrhosis were estimated. Except for cirrhosis each histological abnormality was graded as: 1 (not present), 2 (slight), 3 (moderate) or 4 (severe). Cirrhosis was to be interpreted as either present or absent.

RESULTS

The data on the histological grading of the two groups of biopsies are shown in Table I. Although milder degrees of fatty metamorphosis, nuclear variability and focal necrosis were found, with widespread incidence in both groups of psoriatics and, furthermore, not-infrequent periportal inflammation, no statistically significant differences could be found between controls and patients who had received arsenic. In no case was the combination of liver cell necrosis and inflammatory infiltrations sufficiently severe to establish the diagnosis of hepatitis. Fibrosis of the liver was found in one arsenic-treated psoriatic and in two controls. None of the biopsies showed cholestasis or cirrhosis. In one biopsy (Fig. 1) taken from a 76-year-old male, who 4 years prior to the present investigation was treated with arsenic for 2 years, the histology showed focal proliferations of abnormal liver cells which had been interpreted as primary multifocal liver cancer (9).

DISCUSSION

As reported in our earlier studies (6, 7, 11, 12) the finding of a pathological liver biopsy is not uncommon among psoriatics. The present investigation, however, provided no evidence that earlier treatment with arsenic was responsible for the liver damage

Table I. *Comparison of liver biopsies from psoriatics previously treated with potassium arsenic and psoriatics never treated with inorganic arsenic*

The figures are average gradings. The pathological findings were graded 1 to 4

	No. of patients	Steatosis	Nuclear variability	Periportal inflammation	Focal necrosis	Fibrosis
Arsenic-treated psoriatics	44	1.61 ±0.10	1.87 ±0.10	1.39 ±0.08	1.84 ±0.08	1.02 ±0.02
Controls	37	1.51 ±0.12	2.06 ±0.09	1.49 ±0.09	1.91 ±0.05	1.05 ±0.04

observed. The results of our study should by no means encourage the use of potassium arsenite in psoriasis, but the data may be a relief to psoriatics previously treated this way. Although a number of our patients showed signs of toxicity to arsenic in the form of keratosis or skin cancer, liver pathology in general could not be attributed to the drug. It is worth noting that fibrosis of the liver was uncommon in both groups of psoriatics and that cirrhosis was not demonstrated at all. It is not possible for us to determine whether the finding indicating a multifocal liver cancer in one of our patients bears any relation to his previous treatment with arsenic, or not.

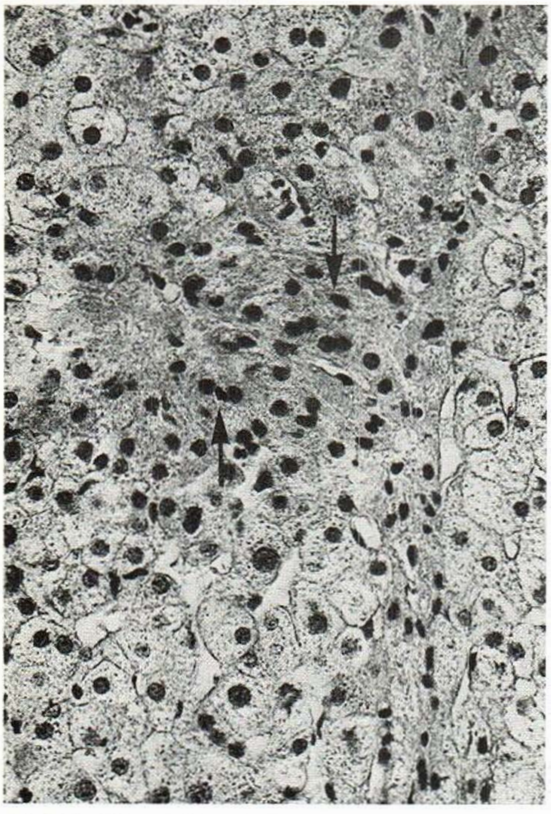

Fig. 1. Localized proliferations of small hyperchromatic liver cells (*arrows*), suspected to betoken hepatocellular carcinoma. ×250.

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H. Zachariae, M.D.
Department of Dermatology
Marselisborg Hospital
DK-8000 Aarhus C
Denmark