The antimalarial drugs are useful agents for the treatment and prevention of polymorphous light eruptions (1–3). Their mode of action in this disease is not known. In one study it was shown that they suppress the abnormal inflammatory papular response but do not alter the normal reaction to ultraviolet light in patients with polymorphous light eruptions (4). In a recent study these drugs were found concentrated in the epidermis, relative to the dermis, but in such amounts that spectrophotometrically, at least, they did not appear to act as light screening agents (5).

This study was undertaken to determine any alterations in the light absorption spectra, or in the electrophoretic patterns of the sera of patients with the papular prurigo-type of polymorphous light eruption, prior to the onset of their eruption, after the eruption appeared, and after administration of the drug amodiaquin.

METHOD

Five (5) patients with a history of the papular type of polymorphous light eruption each summer for the previous 6 to 23 years were included in this study. Specimens of blood serum were obtained (a) in February 1957 when each of the patients was free of the eruption; (b) in the spring of 1957 after sunlight exposure had induced the eruption; and (c) after administration of amodiaquin with successful suppression of the polymorphous light eruption in all patients (3).

Ultraviolet and visible absorption spectra were determined on a Cary Recording Spectrophotometer after dilution of the sera into 0.1 N HCl and 0.1 N NaOH. These media were selected because each yields a characteristic curve pattern (mostly tyrosine and tryptophane absorption) with a characteristic change in pattern from acidic to basic solution.

Electrophoresis was performed on the serum specimens with the Aminco-Stern apparatus. Samples of sera were diluted two times and dialyzed against veronal buffer, pH 8.6, ionic strength 0.1.

Serum from a normal individual free of this disease, was used as the control.

RESULTS

There was no significant modification in the character of the serum spectra as a result of treatment, in any part of the ultraviolet region, including that between 250–260 mu.

In the region near 340 mu. where amodiaquin has a pronounced band, there was no evidence of this absorption in the sera of patients receiving the drug.

In the visible region there were considerable differences between the serum spectra of different patients and also between specimens from the same patients at different times not suggestive of any sequence or pattern.

Electrophoretic patterns were undifferentiable from normal when the individuals were free of eruption, at the height of eruption, and after suppression with amodiaquin.

CONCLUSIONS

There were no characteristic changes in the ultraviolet and visible light absorption spectra, or in the electrophoretic patterns, of patients with the papular form of polymorphous light eruption, whether these studies were done when the eruption was in a quiescent phase, at the height of eruption, or after suppression with amodiaquin.

REFERENCES

