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Role of patch testing in Stevens-Johnson Syndrome and Toxic Epidermal Necrolysis in a tertiary centre in North

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Conflicts of Interest: Nil

Abstract

Stevens Johnson Syndrome (SJS) and Toxic Epidermal Necrolysis (TEN) are life threatening disorders mainly due to drugs. Patch testing is useful in identifying the drug as a cause. Objectives: To confirm the drug as the causative agent for SJS and TEN by patch testing in selected cases.

Materials and Methods

A 2 year study of patients presenting with SJS and TEN was carried out. A detailed examination to know the cutaneous and mucosal involvement was done. Biopsy was done in 3 patients and patch testing in 8 patients who were willing.

Results

There were fifty patients of SJS-TEN spectrum. Of which 31 were SJS, 3 had SJS-TEN overlap and 16 had TEN. Anticonvulsants were implicated in causing these reactions in 24 patients (48%) with carbamazepine being the most commonest i.e.in 16 patients (32%). Three patients with TEN (6%) died. Patch testing was negative for the drug implicated in all the 8 cases.

Conclusion

To conclude, TEN was less commoner than SJS, had more sequelae and more mortality compared to SJS. Mortality was lower compared to other studies. Patch testing had no role in our study in identifying the implicated drug.

Key words

Stevens Johnson syndrome, Toxic Epidermal Necrolysis Treatment, Patch testing

Key messages

Carbamazepine was the most commonest drug implicated. Patch testing is a safe procedure in identifying the drug as a cause.

Introduction

SJS and TEN are severe life threatening illnesses mostly due to drugs. Early identification of the disease will help us to stop the causative drugs and arrest the progression. Patch testing is a safe method to detect drugs as a causative agent in maculopapular rash,fixed drug eruption and probably in SJS and TEN

Materials and Methods

Eight patients (3 male and 5 female) of whom one was a female child underwent patch testing with various drugs. Of these 3 of them were SJS, one was TEN, 4 were SJS who went in for TEN. The time interval from the clearance of symptoms to patch testing ranged from 2 to 16 months. Permission from ethical committee were obtained. Consent was obtained and patients were admitted in the ward and all emergency measures were

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kept ready before doing the test. One patient was patch tested with both carbamazepine and phenytoin and rest of them with the suspected drug only. Concentration of allergen used was paracetamol 1%, phenytoin 1% and carbamazepine 1% in petroleum jelly. Control testing with petroleum jelly and normal saline were done [Fig 1]. Results were read only after 48 hours as patients were not willing to be admitted upto 96 hours. Results were read according to ICDRG recommendations. Control testing was not done partly due to unwillingness and partly due to fear of sensitization and legal aspects. Patch testing was done in 8 patients. No untoward effects were noted in any of the cases.

Results

Patch testing was done in 8 patients and no positivity was found. No untoward effects were noted in any of the cases. **Discussion**

Patch testing is helpful in diagnosing delayed hypersensitivity reactions. There is a role for patch testing in maculopapular rash, erythroderma and fixed drug eruption. Howerziel et al reported six positive cases out of seven when tested with 10%, 20% and 40% carbamazepine.¹ Silva et al described 3 patients with positive patch test to carbamazepine 1,2 and 10%.² Positive patch tests with carbamazepine were also reported by others.^{4,5,6} In our study, smaller concentration i.e.1% was used, for fear of possibility of a generalized reaction. But there is a possibility of missing some weak reactions also. We got no positive patch test in our study. Alanko et al also concluded that no positive patch tests to be expected in drug reactions other than maculopapular rash, erythroderma and FDE.⁵ But there are reports of positive patch tests with ampicillin (50mg/100ml) in a patient with TEN.⁵ Liao et al also reported positive patch test in a SJS patient with 1 and 10% carbamazepine.⁶ Sharma et al reported 60% patch test positivity with antiepileptics of which two patients were of TEN and one patient of SJS. ¹³ Two of our patients had allergy to petroleum jelly and adhesive plaster. No other side effects were noted. Results were read only once at 48 hours which could also have missed few results.

To conclude, Patch testing was not very helpful in detecting drug induced SJS / TEN according to this study. But may be because the drug concentration used was low and the results were not read after 96 hours. It is a safer procedure compared to various other provocation tests. More patients and controls have to be tested to draw a definite conclusion which was not possible because of unwillingness of our patients.

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Figure legends:

Fig.1: showing patch testing done with phenytoin 1% in a patient with TEN to phenytoin

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