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# A SERIAL CASE OF 3 TARDIVE COMPLICATIONS OF TOXIC EPIDERMAL NECROLYSIS OVER THE OCULAR SURFACE

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## ABSTRACT

**Introduction:** Drug-induced allergic reactions may have different clinical manifestations in which Lyell's and Stevens- Johnson syndrome are life-threatning. The incidence of drug-induced allergy is estimated at 1 to 5 cases per million person-years. The commonly associated drugs to cause toxic epidermal include sulfonamides, penicillin, anticonvulsant agents, antituberculosis and allopurinol. The complications of Stevens-Johnson (SJS) and Lyell's syndrome on ocular surface are blinding in the majority of the cases especially if the acute and serious onset is mismanaged. **Observations:** We encountered three cases of patient presenting ocular complications of toxic epidermal necrolysis in 2018: a 34 years-old female patient, two men of 16 and 28 years-old. The implicated drugs were sulfonamides and penicillins. The ocular lesions were constituted by symblepharons, corneo-conjunctival keratinisation, corneal neovascular proliferation, and corneal opacity. The management is difficult and the visual recovery is not guaranteed. **Conclusion:** A particular cautious is to be considered before prescribing high risk drugs.

**KEYWORDS:** Drug-induced allergy, Lyell, Stevens-Johnson, ocular surface, symblepharon.

## INTRODUCTION

The toxidermitis include skin and mucosal reactions side effects of drugs. Its prevalence is 8%. In France, this cutaneous affection represent 1.5% of hospitalization in dermatology, and 1% of external consultations. We call«toxic epidermal necrolysis » (TEN) all life-threatening allergical revelations triggered by drugs. There is no drug semeiological specificity. A TEN includes Lyell's and SJS. The initial presentation of the disease are impressing, similar to a large and deep cutaneo mucosal burn. In case of healing, these diseases leave a disabling both anatomical and functional sequelae commonly on the eyes.[1]

The aim of this serial case presentation is to describe surface ocular lesions, sequelae of NET, observed at 3 patients examined during the consultation at ophtalmology service of Universitary Hospital Centre Joseph Ravoahangy Andrianavalona Antananarivo.

## SERIAL CASES

**Observation 1**: A 34 years-old woman came to consultation for bilateral vision loss since 10 years. She presented a Lyell's syndrome in 2008 that triggered by sulfanomides intake under medical prescription. She had no familial past history of allergy to this type of antimalaria drug, nor a known allergy. The skin examination revealed multiple cutaneous scares on the all parts of the body. In addition, She had a limitation of flexion movement of the her right elbow. The visual acuity of both eyes was limited at perception of hand movement. The patient complained of having ocular movements limitation accompanied with moderate dolor. The observed ocular lesions on both eyes were: symblepharons, superficial and deep corneal neovascularization over 360°, pre corneal fibroid membrane, corneal opacity and bilateral cortical cataract. The inferior lacrymal orifices were obstructed. The ocular B scan showed a planar retina, without detectable lesion in the vitreous. The ocular tonus was normal. The Schirmer test revealed 3mm high of absorption in 15 minutes. (Figure 1).

**Figure 1: Ocular Sequelae of Toxic Epidermal Necrolysis.**

**Observation 2**: A 16 yera-old patient came to consultation for blurred vision of both eyes since 3 years. He presented a Lyell's syndrome in 2015 resulted from under medical prescription penicillin intake for he had ORL infection. This patient had no known past history of allergy, nor familial drug-induced allergy background.

His examination observed also cutaneous lesions similar to abovementioned observation. The visual acuity of both eyes was hand mouvement perception. There was no disorder of oculomotor tracks. We discovered symblepharons, conjunctivals brids, superficial and deep neovasculart over 360°B and corneal opacity with corneal surface irregularity, bilateral debutante cataract. The B scan ultrasond as well as ocular tonus were normal. Schirmer test showed an imbibition of the strip about 4 mm in 15 minutes. Besides we observed a bilateral chronic blepharitis. (Figure 2).

**Figure 2: Ocular Sequelae of Toxic Epidermal Necrolysis.**

**Observation 3**

A case of 28 years-old male patient, came to consultation for vision loss since 9 years period following a Lyell's syndrome induced by penicilline in 2009, in the context of self medication. Il ne présentait pas d'antécédent d'allergie médicamenteuse personnelle ou familiale. Son examen retrouvait des cicatrices cutanées multiples. She had no personnel and familial histories of allergy to drugs. The clinical finding revealed a multiple skin cicatricial lesions.

The patient had no locomotor track disorder but he has a problem of asthmatiform dyspnea occured since his allergic reactions in 2009. L'acuité visuelle aux deux yeux était également limitée à une perception des mouvements des doigts. The visual acuity of both eyes was evaluated to hand movement perception.

**During ophtalmological examination, we found:** symplepharons, trichiasis, superficial and deep corneal neovascularization, corneal opacities, bilateral immature cataract, the ocular

tonus was normal, the Schirmer test was altered (imbibition of 4 mm high during 15 mn), and chronic blepharitis. (Figure 3).

**Figure 3: Ocular Sequelae of Toxic Epidermal Necrolysis.**

## DISCUSSION

The clinical revelation of the cases that we described was similar in many facts. The patients were young and very limited in their daily activities. It is not possible for them to continue their studies or to find a job. They were all depressive patients who underwent a multidisciplinary follow-up by dermatologist, psychiatrist, internist and ophtalmologist. They were a very care seekers to improve at least their visual comfort especially the visual acuity in order to get an autonomy.

The toxic epidermal necrolysis is, in fact, a rare disabling disease and the patients become a burden of the family and the society as far as survival and management are concerned. The rareness of this disease was reported by the majority of African colleagues : 4 cases in 6 monts only in Congo, 10 cases in Cameroun. These cases were all seen in hospitalization service and in dermatological consultation also.

The mean age is variable, but affect especially the age group between 25 and 40 years old. The early ocular complications were encountered in the case where cutaneo mucus involvement are less than 30%. This result is due to the fact that the mortality rate is very important with the larger lesions. The further ocular complications commonly resulted from a precarious management of the early complications.[2][3][4][5][6][7]

The drugs imputability is performed after a survey mentionning the list of all medicines taken during 30 days befor the developement of the first clinical signs of the toxic epidermal necrolysis. The survey was conducted by the service which initially took in charge our patients. So, these patients came to consultation with the copy of their previous hospitalization files archives at dermatology service. In the littérature, the implicated drugs were found in 70% of the cases, The « innocents » medicines were not incriminated in 60% of the cases, and it is not possible to determine the incriminated drug in 5% of the cases. However, toxic epidermal necrolysis is the most frequent for the patients who take many drugs which suggests a crossed hypersensibility reactions causing this pathology. The most implicated drugs that we identified in our serial cases were the antibiotics of beta lactamines class and sulfanomides. The theories suggested the non steroidal antiinflammatories, allopurinol and anticonvulsivants.[8][9]

Our patients didn't get an ophtalmologicall follow-up during the precocious period of the disease. Thus, we don't have any report mentionning the early ophtalmic clinical signs such as conjunctivitis, ulcer, filamentous keratitis. All the patients in our serial cases were examined by the ophtalmologist in a tardive stage with tardive lesions and sequelae.

According to our hypothesis, the ocular problems are left behind at the second plan because the vital prognosis is engaged at the first plan. Nevertheless, it is important to point out that an eyeball loss and a phtysis of the eyball are possible in the absence of an initial adequate management of ocular involvement during the toxic epidermal necrolysis.

Consequently, to avoid the tardive complications of sequelae set-up, a precocious ophtalmological care must be instored, including a frequently conservator free lacrymal substitutes instillation, frequent eye wash, topical corticotherapy, ocular surface infection early screening with puting or not in place a symblepharon ring depending on the importance of conjunctival lesions.[10]11]

There are many alternative therapeutics that can be proposed to the patients without assuring with guarantee the success concerning the ocular surface and vision restoration.

The cleavage of the conjunctival adhesions is possible with the aim of ameliorating the ocular movement comfort of the patients, conjunctival fornix creation, conjunctival autograft, amniotic membrane graft. The all aforementioned are combined with a frequently conservator free lacrymal subtitutes instillation and a long term topical corticotherapy. The corneal graft is hardly indicated because of the high risk of rejection due to the important ocular surface alteration: ocular dryness, deep neovascularization over 360°. The more the etiology of the ocular dryness is multiple, the more difficult is the management: by lacrymal secretion insufficiency and by palpebral abnormality responsible for meibomian gland dysfunction. The scleral lenses disponibility can, anyway, help palliate this dryness of the eye problem.[12][13][14][15]

## CONCLUSION

All in all, before all drug prescription, us other medical practitioners must not forget to research the risk factors of developing an epidermal toxic by investigating at least personnal and familial drug-induced allergy antecedents. The list of all the medicines taken by the patient must always be established. In the case of toxic epidermal necrolysis, a definition of the imputability criteria to the suspected drugs will permit to avoid an expulsion abusive of» other medicines so-called « Innocents ». The management of the toxic epidermal necrolysis is immediately multidisciplinarian, because the sequelae especially ocular are disabling and harm the patient's future life. In the case of toxic epidermal necrolysis sequelae affecting the ocular surface, an anatomical and functional eyeball restoration attempt may be performed through many steps, but it is very difficult and requires a lot of patiences.

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