

# WEST INDIAN MEDICAL JOURNAL

**Supplement**

Vol. 48 (Suppl. 3): 1–24

July, 1999

ISSN: 0043 – 3144 WIMJAD



**Ophthalmological Society  
of the West Indies**

**10th Annual Congress**

**July 8 – 10, 1999**

**Curaçao, Netherlands Antilles**

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PUBLISHED BY THE FACULTY OF MEDICAL SCIENCES,  
UNIVERSITY OF THE WEST INDIES, MONA, KINGSTON 7, JAMAICA

## PREFACE

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The Ophthalmological Society of the West Indies was conceived by West Indian ophthalmologists who visited Texas for a few days ten years ago. We had long felt that a West Indian Ophthalmological Society was necessary for the region and plans were laid at Billy Bob's watering hole to hold a regional meeting in Jamaica.

This meeting was sponsored by Alcon and it was a roaring success, attended by ophthalmologists from all the islands of the Caribbean.

The region and its ophthalmologists have benefited immensely by the interaction of the regional professionals. We have managed to move Ophthalmology into the limelight where it is now being given the respect that it deserves, and we have awakened the conscience of the politicians of the region. We are hearing more and more frequently about blindness in the region and plan to help to eradicate treatable blindness.

The Annual Congress gives us the opportunity to debate the local conditions and compare our different approaches to the specialty.

It is allowing us to build a body of local knowledge and statistics from which informed planning may be launched. It also allows collaboration and a unified approach to solving the ophthalmic problems that beset the region.

Over the past ten years of our existence we have seen a growing interest in our specialty, with increasing numbers of young doctors opting to study Ophthalmology. I foresee, however, a future where training positions in the traditional countries will become unavailable, and we need to address this reality. At this our tenth Congress it is a good time to reflect on what we have achieved and to look ahead towards making a difference to Ophthalmology in the region.

The Ophthalmological Society of the West Indies is developing quickly and it is my fervent hope that, as it continues to grow, it will influence politicians and academics alike.

*Dr Anirudh Mahabir  
FRCS(Ophth), FRCOphth.  
President,  
OSWI*

## Surgical Ophthalmology

Chair: Dr Victor Wiedenkopf

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### Ocular Alkali Burns: Limbal Autograft

*Max Gerard, Raymond Richer, Harold Merle Service d'Ophthalmologie, CHU de Fort de France, Hôpital Pierre Zobola Guitman, Martinique, FWI*

The authors present five patients treated with limbal autograft for serious recent ocular alkali burns, in four of whom it has permitted healing of recurrent corneal ulcers or the reduction in the period of conjunctival recovery. Functional amelioration is also important and this intervention has permitted a useful visual acuity. One case was complicated by bacterial keratitis, but our experience has confirmed the efficacy of the technique for managing surface ocular disorders. However, there have been few reports hitherto of the use of limbal autografts for serious ocular burns, and our study has demonstrated its usefulness in this setting and the appropriate timing.

Videotape (U-Matic or VHS): The authors report their surgical technique of limbal autograft used in recent and severe ocular burn, a modification of Kenyon and Tseng's technique. The physical signs used as indicators for surgery, the selection of the limbal region and methods of following the graft, are presented.

### Ocular Ammonia Burns: Treatment

*Harold Merle, Max Gerard, Patrice Josset, Joel Blomet Service d'Ophthalmologie CHU de Fort de France, Hôpital Pierre Zobola Guitman, Martinique, FWI*

#### **Purpose:**

The authors present the results of an experimental study to support the proposal for a delay in ocular bathing in the treatment of severe ocular burns due to ammonia. This study compares two solutions of ocular wash: physiological serum and Diphoterine®.

#### **Materials and methods:**

23 eyes of New Zealand albino rabbits were burned for one minute by 100 µl of a solution containing 15.3% ammonia. Then, each eye was washed by an ocular wash of 250 ml of physiological serum, or of 250 ml of Diphoterine®, after a delay of 1, 3, 5, 10 and 30 minutes. The effects were appraised by measuring the anterior chamber, the concentration of ammonia in the anterior chamber, and by the cytopathological analysis of these burned corneas.

#### **Results:**

An ocular wash with Diphoterine® in the first few minutes following an ocular burn induces an inflexion of the pH graph, contrary to an ocular wash with physiological serum. On the other hand, there is no inflexion of the pH graph at 30 minutes, and the concentration of ammonia in the anterior chamber is low at that time. The cytopathological analysis shows stromal oedema with the ocular wash by physiological serum, but not when Diphoterine® ocular wash is used.

#### **Discussion and Conclusions:**

This study proves the importance of ocular bathing in the first minutes following an ocular burn by ammonia. The efficacy of an external ocular wash by Diphoterine® is proved by biochemical and cytopathological features; the importance of sequelae has been linked to the initial stromal oedema.

*(Experiments performed in the Laboratoire de Biophysique Facultés de Médecine et de Pharmacie, Université d'Auvergne, France, in accordance with Association for Research in Vision and Ophthalmology Guidelines for the care and use of laboratory animals.)*

## Intraocular Penetration of Toxic Substances

*Harold Merle, Max Gerard, Patrice Josset, Joel Blomet Service d'Ophtalmologie, CHU de Fort de France, Hôpital Pierre Zobola Guitman, Martinique, FWI*

### **Purpose:**

The seriousness of ocular alkali burns has been linked to the rapidity with which the alkali enters the eye. The authors report the results of an experimental study on intraocular ammonia penetration.

### **Materials and methods:**

23 eyes of New Zealand albino rabbits were burned by applying for one minute 100  $\mu$ l of a solution titrating 15.3% of ammonia. A pH meter probe was inserted into the anterior chamber beforehand to permit pH measurements every 5 seconds. Experiments were carried out after 1, 3, 5, 10 and 30 minutes. The ammonia concentration was measured at the end of the experiment by puncturing the anterior chamber.

**Results:** The pH increased 1 to 3 minutes after applying ammonia on the cornea, reaching a maximum (mean) of 10 five to six minutes later, before an exponential decrease. After 30 minutes, the pH was always more than the physiological pH. The penetration ratio of ammonia through the cornea is about 11%. At 30 minutes, the concentration of ammonia is low. The pH observed differs from the calculated pH.

### **Discussion:**

The difference between observed and calculated pH indicates increases with an intervening plateau, showing the existence of two successive acid-base chemical reactions between ammonia and two types of acid. In addition, the amount of protein destroyed by ammonia can be calculated.

### **Conclusions:**

These data show for the first time the possibility of calculating the density of proteins destroyed in vivo by a base penetrating the anterior chamber. This opens the possibility of interesting research work, because it is possible to relate the density of proteins destroyed in the eye to the pK of this base, and to forecast the potential danger of a base to biological tissues.

*(Experiments performed in the Laboratoire de Biophysique, Facultés de Médecine et de Pharmacie, Université d'Auvergne, France, in accordance with Association for Research in Vision and Ophthalmology Guidelines for the care and use of laboratory animals.)*