

O r B i t s

“Blind Drunk”

Literally

Current concerns surrounding excessive alcohol consumption (especially in the young) may have been given further validity by a recent study conducted in Victoria that illustrates one of the long term effects of “excessive” drinking. (*How many drinks do you consider excessive?*)

“...a study of Australian men has found...drinking four beers a day doesn't just cause a serious beer gut - it could also be damaging your eyesight...”¹ Melbourne research shows men in their 60s who drink alcohol heavily are about six times more likely to develop the most debilitating form of age-related macular degeneration (AMD).



Dr Elaine Chong said that “...We found that higher levels of alcohol, more than four standard drinks a day, was associated with a three-fold increase in end-stage AMD in men..... beer drinking, in particular, carried a six-fold increased risk. Dr Chong said that “...Alcohol is a neurotoxin, so it is thought that high levels can actually cause retinal damage that might lead to the disease...it was possible alcohol could increase oxidative stress to the retina...” Maybe a chardonnay is the way to go but all things in moderation.

1. 2008 News Limited. All times AEDT (GMT + 11). see abstract p2.



MARK YOUR DIARY AONAVic present “Squints, Amblyopia: Update”

28th April @ Lucy Jones Hall,
Royal Victorian Eye and Ear Hospital,
commencing @ 18.30,
Registration & light Supper 18.00,
Flyer with details will be posted soon.

Presidents Report March 2009

Hi All,

Well the year is slipping away as it seems to with such speed these days. Hard to believe autumn has arrived but good to see the rain.

Professionally, there is change happening as the movement towards national registration. What does this mean for Ophthalmic nurses? We are yet to find out the impact for specialties such as ours and we are hoping to have an updates available to you in our newsletters, website or clinical meetings.

The Nurses Board Victoria has kindly allowed us to include their frequently asked questions for your perusal.

I should like to take this opportunity to congratulate Nigel Fidgeon on becoming the Nurses Board Victoria's new CEO. Some of you may remember Nigel was Chief Nursing Officer at the Royal Victorian Eye and Ear and was a supporter of the National Competencies

Project at the inaugural meeting of the National Co-ordination Committee held in Victoria.

In preparation for these changes the committee is exploring the avenues for having all the association educational activities accredited so that your time at our sessions is well spent and contributes not only in terms of content to your professional development
con't P4

This Issue:

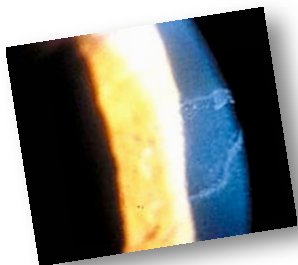
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R.E.S (Recurrent Erosion Syndrome)

In 2007 - 2008 198 cases of Recurrent Erosion (RES) attended the Emergency Department at RVEEH. Over 1800 patients had corneal injuries, exposing them to the risk of RES. Whilst this may seem insignificant compared to 23,000 ophthalmic episodes of care it doesn't include the immeasurable OPD, private, undiagnosed, misdiagnosed or untreated cases cared for in the wider community. It is certainly a significant and debilitating problem, especially for the patient, and worthy of closer examination. I hope you find this article as informative and instructive as I did.

Anatomy/Physiology

The cornea is arranged into five main layers but when discussing recurrent corneal erosion, the epithelium is the layer to focus on. It consists of three types of cells: polygonal, supra-basal (wing) and basal cells. Polygonal cells play an important role in increasing the surface area of the contact between tear film and cell membrane. The barrier tight-junctional complexes on their lateral sides restrict entry of the tears or dyes into the inter-cellular spaces. Supra-basal cells beneath have similar tight junctions. The single-cell layer of basal cells is the only one capable of mitosis and responsible, together with epithelial stem cells localized to the limbal basal epithelium, for epithelial regeneration. They also secrete the extra-cellular matrix which makes basement



membrane. Complete turnover of corneal epithelial cells occurs in about 7-10 days. These phenomena are co-dependent and controlled by feedback mechanisms depending on the cell distribution and cell layer thickness. After its destruction the epithelial bond to the underlying basement membrane

tends to be unstable during the six week healing period it takes for the reconstruction of basement membrane..... immediately following the injury, cells at its edge begin to cover the defect as rapidly as possible through a combination of cell migration and cell spreading. Depending on the size of the injury, this process begins immediately, after minor defects, and within 4-5 hours after major defects. This early non-mitotic phase of wound coverage is remarkable for its speed which is 60-80 $\mu\text{m}/\text{h}$. Mitosis and cell proliferation begin 24 - 30 hours after medium sized injury, andup to 96 hours when the defect is large.

The epithelial healing process begins when basal epithelial cells undergo mitosis.....any disruption to basal cell production will make the eye more prone to recurrent erosion. Various conditions may delay normal healing process.... damage to the cellular substrate caused by infectious disease, diabetes, chemical burns, dystrophies, ocular surface inflammation, dry eyes, neurotrophic or exposure keratopathies, conjunctival disease, extensive damage to the limbal stem cells, eyelid abnormalities.

Etiology

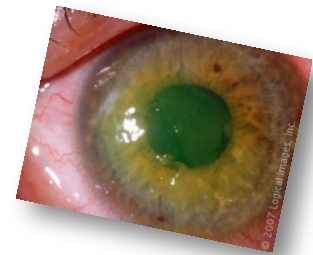
The clinical etiology of primary recurrent corneal erosions includes Epithelial Dystrophies (*map dot fingerprint dystrophy, also known as epithelial basement membrane dystrophy or Cogan microcystic dystrophy*), Meesmann's Dystrophy (*hereditary juvenile epithelial dystrophy*), Bowman's Membrane

Dystrophy (*Reis-Bücklers I and II*), and Stromal Dystrophies (*macular, lattice, or granular dystrophies*). Approximately half of the patients with recurrent corneal erosions have map-dot fingerprint dystrophy, while 10% of patients with anterior basement dystrophy have recurrent corneal erosions.

Secondary clinical etiologies include mechanical trauma (fingernails, paper), surgery, and miscellaneous disorders (diabetes, dermatological diseases). Primary clinical etiology usually produce a

micro-form, and those after trauma a macro-form of the disorder.

Post-traumatic, non-dystrophic recurrent corneal erosion is, clinically, the most common form. Injuries associated with carbon-based moieties such as a child's fingernail or a paper cut will more likely lead to recurrent erosions than a metallic injury. (*This relates to the disturbance of the stereo-chemistry of the anchoring fibrils and*



the basement membrane of the basal epithelial cells.) After corneal surface injury, basement membrane thickening, discontinuities and duplications are seen for 8-12 weeks, so the overlying epithelium is vulnerable to detachment during this period. Refractive surgery including LASIK and PRK can induce or precipitate symptoms of recurrent corneal erosions. Surgeons must minimize epithelial damage to prevent recurrent corneal erosions after LASIK.....adequate irrigation of the corneal surface immediately before micro-keratome pass and careful attention to flap epithelium during flap replacement reduce epithelial damage. The activity of gelatinase (MMP-2 and MMP-9) is up-regulated in corneal epithelial specimens of patients with recurrent corneal erosions. During wound healing, the epithelial basement membrane is altered by gelatinases, (*which cleave collagen types IV, V, VII and X*).Immuno-localization studies suggest that MMP-2 (gelatinase) is concentrated in basal epithelial cells where it may play an important role in degradation of the epithelial anchoring system and the recurrent epithelial slippage and erosion observed in patients. con't P3.



ARTICLES OF INTEREST

Are you pioneering new procedures, new equipment, pharmaceuticals, treated interesting cases? Let us know what's happening out there - articles for OrBits are most welcome.

Please contact Pat Usher - Pat.Usher@eyeandear.org.au

R.E.S. con't

Symptoms

- foreign body sensation,
- photophobia,
- blepharospasm,
- decreased vision &/or
- lacrimation upon awakening or following eye rubbing or eye opening.

Clinical signs

- localized, visible roughening of the corneal epithelium which stains superficially with fluorescein dye.
- typically unilateral and in the vicinity of the original corneal defect.
- bilateral or idiopathic lesions suggest a basement membrane dystrophy.
- may occur as frequently as daily or as sparsely as biweekly or monthly, even yearly.

Epithelial basement dystrophy is an associated finding in many cases....*marked by small, intra-epithelial dots and sub-epithelial ridges and lines ("maps", "fingerprints"), representing poor adhesion of the epithelial basement membrane and Bowman's layer.*

Treatment

The common goal of each conservative or surgical treatment is fast healing and encouraging proper formation of adhesion complexes between the epithelium and the stroma without infections or recurrences.

Immediate the treatment consists of:

- cycloplegia
- topical antibiotic
- inactivity
- analgesics
- debridement of loose flaps/tags

If the pain is severe:

- topical NSAID's drops.
- today, pressure patching is somewhat controversial - *but still used.*
- bandage, soft contact lenses have nearly supplanted the traditional pressure patch.

After the episode has subsided,

- lubrication....to prevent mechanical epithelial trauma from the eyelids.
- continued debridement of loose flaps of epithelium.

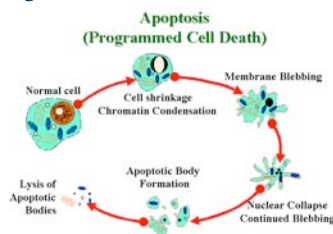
In some dystrophic cases, reduplicated basement membrane can be scraped off before lubricant treatment is resumed.

Lubrication should be continued for 3 to 6 months after erosion.

- Hypertonic saline (5% sodium chloride) may be applied if the patient has recurrence while using artificial tears and ointment. (*Hypertonic agents may transiently produce an osmotic gradient, drawing fluid from the epithelium, and*

may promote the adherence of epithelial cells to the underlying tissue.)

- Medications that inhibit metalloproteinase-9 produce rapid resolution and prevent further recurrence of recalcitrant recurrent corneal erosions. *Durusan et al.* suggest that recalcitrant recurrent corneal erosion can also be treated with inhibitors of matrix metalloproteinase-9 (such as tetracycline 250 mg twice a day for 12 weeks - still under investigation).
- Other novel treatments, still under observation, are opioid antagonists such as naltrexone, CFTR activators, topical fibronectin eye drops, topical tretinoin-a vitamin A analog growth factors, and autologous serum eye drops. These agents influence epithelial migration, mitosis, apoptosis, adhesion and differentiation in various ways, and are being studied as possible therapeutic agents to enhance corneal epithelial healing.



- Alcohol de-lamination or debridement of the corneal epithelium is also an option which is still under research.
- More aggressive surgical options include:
 - anterior stromal micro-puncture....*the ophthalmologist uses a 25-gauge needle to make superficial puncture wounds in the involved area....producing a firm adhesion between the epithelium and the underlying stroma, where epithelial plugs work as an anchors in the puncture sites. It is preferred to leave the central optical zone clear. The same effect can be achieved by use of argon or YAG laser, surface cauterization or diathermy. Judge et al. suggest that it does not show any advantages over the needle because of more scarring and corneal topographic changes.*
 - Superficial keratectomy...done mechanically or by laser. This removes the diseased basement membrane down to the Bowman's layer and the superficial stroma...cleaning Bowman's membrane resulting in a fresh substrate onto which the epithelium can re-grow and create attachment complexes.
 - Excimer laser photo-therapeutic keratectomy (PTK) is now a well-

- established treatment modality for recurrent corneal erosion. Partial ablation of Bowman's layer with PTK gives a smooth surface for the newly generating epithelium to migrate and form adhesion complexes. A modulating agent such as methylcellulose is used to coat the depressions and expose the peaks in the cornea for the laser and polish the surface of the cornea. (*Soong et al. compared it with dissectional methods and found it less technically demanding, while achieving better results*) *This technique permits precise removal of adherent abnormal basement membrane and allows the new epithelium to adhere to the fresh substrate. The minimal ablation depth usually results in an insignificant refractive shift. There are several different PTK techniques. Subepithelial technique* (conventional) first includes debridement of the epithelium and then the laser energy is emitted onto the involved area. *Trans-epithelial technique* does not involve removal of the epithelium, the laser works directly onto the corneal surface. *Aggressive PTK* is a technique where the ablation goes to deeper layers up to 20- μ m depth. In comparison to other forms of PTK, aggressive PTK showed the lowest recurrence rate (*as reported by Eschstruth and Sekundo*) for a long-term follow-up. Intraoperative application of mitomycin C after PTK shows (*according to Haschemi et al.,*) reduction of recurrences and haze.
- A scarifier blade or blunt lamellar dissection blade can be used to peel and dissect off changed tissue.
- A fine grade diamond polishing drill is used to remove ill tissue

Selection of Treatments.

The choice of treatment may be affected by the etiology, location of disease (*axial or off-axis*), co-existing ocular diseases, individual patient reliability, availability of equipment and evaluation of corneal topography, including the surface regularity index (SRI) and surface asymmetry index (SAI).

If the etiology and location of the involved area is our leading factor for the choice of therapy, then the first step is to divide them into two groups, *dystrophic or primary and post-traumatic or secondary group*. Primary cases are usually refractive to conventional therapy; *so Eschstruth and Sekundo and Starr et al. recommend PTK. Diamond burr or debridement are desirable methods according to Soong et al.29 and Sridhar et al.* con't P4

Presidents Letter con't

but assists you in meeting your registration requirements.

This year it is Victoria's turn to coordinate the National newsletter so we would welcome any assistance with articles, collation or any other assistance to help our already hard working Pat Usher, media manager. We aim to form a special working group to assist Pat with this additional taskso if you can help in anyway contact Pat.

We are also hoping to promote the Ophthalmic specialty perspective by offering nursing presentations to other specialty areas which overlap with Ophthalmic nursing.

Hopefully we will see you at our clinical meetings for 2009.

On behalf of the committee I take this opportunity to wish you a happy, healthy and professionally rewarding 2009.

So grab a coffee and enjoy the first newsletter for 2009



President
Pam Armstrong



Sponsors

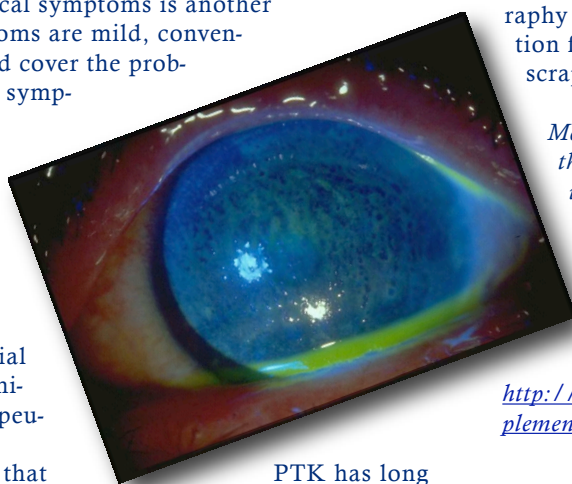


R.E.S con't

Secondary cases respond to conventional therapy combined with contact lenses, and they are the methods of choice when dealing with changes near the axial location, but anterior stromal micro-puncture is the way to go when dealing with paraxial changes.

The severity of clinical symptoms is another factor...if the symptoms are mild, conventional therapy should cover the problem. More extensive symptoms will lead us to the use of debridement or soft contact lens, and severe and frequent symptoms leave us with anterior stromal micro-puncture or superficial keratectomy, mechanical or laser, as therapeutic options.

Many authors agree that PTK has long lasting effects, better visual outcome, less recurrence, and should be our first choice when treating these cases refractory to conventional therapy.



On evaluation of corneal topography...an irregular topography suggests corneal scraping, so that the epithelium has a chance to grow back and smooth out the surface. Significant improvement in topography and vision may be seen after epithelial scraping...regular topography according to *Donnenfeld et al.* would be an indication for anterior stromal puncture rather than corneal scraping.

Massive research efforts are being made into R.E.S. but there are still a significant number of poor outcomes. Our understanding has increased markedly but there is still a long way to go. Meanwhile we continue to modify our treatment regimes to reflect the current trends.

<http://www.acta-clinica.kbsm.hr/arhiva/Acta2007/Acta1-supplement/005%20str%2025-30%20Mandic.pdf>

Membership Fees due 1st July 2009

\$50 until 31st October

late fee \$70 from 1st November

Renewal forms with next newsletter in June



Alcohol Intake and Macular Degeneration. cont

.Elaine W-T. Chong¹, Luibov D. Robman¹, Julie A. Simpson^{2,3}, Allison M. Hodge⁴, Khin Zaw Aung¹, Dallas R. English^{2,3}, Graham G. Giles^{2,3}, Robyn H. Guymer¹

¹Centre for Eye Research Australia, the University of Melbourne, Victoria, Australia.

²Cancer Epidemiology Centre, The Cancer Council Victoria, Victoria, Australia

³The Centre for Molecular, Environmental, Genetic and Analytic Epidemiology, the University of Melbourne, Victoria, Australia.

⁴Department of Medicine, the University of Melbourne, Victoria, Australia.

Purpose: To evaluate associations between past alcohol consumption and the prevalence of Age-related Macular Degeneration (AMD).

Methods: We evaluated results from a cohort study of 6,734 participants aged 58 to 69 years at baseline in 1990-94. Baseline alcohol consumption was estimated from a structured interview. At follow-up from 2003-06, digital macula photographs of both eyes were evaluated for early and late AMD signs. Logistic regression was used to estimate odds ratios, with adjustment for age, smoking and other potential confounders.

Results: In males, we found a positive association between total

alcohol consumption, and *beer* intake, with late AMD; comparing ≥ 40 g/day to lifetime abstainers, "...demonstrated a 6 fold increase in AMD risk." No significant associations with prevalence of AMD were observed for alcohol intake in women, or for wine or spirits intakes. A modest positive association between baseline total alcohol intake and prevalence of early AMD was also found when data from men and women were combined, comparing ≥ 40 g/day to lifetime abstainers of alcohol intake.

Although alcohol has been postulated to have a J-shaped association with AMD risk, our results did not show evidence of departure from linearity.

Conclusion: In males, high levels of beer consumption were associated with an increased prevalence of late AMD. Alcohol consumption, particularly at levels higher than 40g/day (approximately 4 standard drinks), may increase the risk of both early and late AMD.
CV:

Dr Elaine Chong, MBBS, PhD, is an Ophthalmology registrar currently undertaking her Ophthalmology training at the Royal Victorian Eye and Ear Hospital.

Calendar of Events 2009

28th April 2009

AONA Victoria,
Squints - RVEEH, Melbourne
www.aonavic.com.au

June 20th 2009

AONA NSW Conference
www.aonansw.org.au

4th July 2009

AONA Victoria
Clinical Meeting, Workshop TBC

August 22nd 2009

AONA Queensland Conference
www.aona.org.au

September 2009

AONA Victoria
Clinical Meeting - Victoria TBC

November 14th - 18th RANZCO -

December

AONA Victoria
Workshop TBC

Committee Meetings (every 4th
Tuesday 6.30 pm, alternating
teleconference)

17th March	14th April
12th May	9th June
7th July	4th August
1st September	29th September
27th October	24th November

NATIONAL CHILDREN'S VISION SCREENING PROJECT

This project is at the key stage of summarising the consultation process with professionals and stake holders and literature review.

We will update you further on this project as information comes to hand.

As Ophthalmic nurses it is good to know of such projects in raising awareness of vision health in the community and empowering parents with eye care options as part of the eye care professional team.

Orbis FEH

Use your talents to participate in

ORBIS's mission to reduce blindness in developing countries worldwide.

The **ORBIS Flying Eye Hospital (FEH)** is a unique mobile teaching and operating facility on board a DC-10 jet aircraft that travels to developing countries worldwide to share the gift of sight. Our Flying Eye Hospital staff travel up to 45 weeks per year and anywhere from a few weeks to 3 months at a time. For more information about ORBIS and this employment opportunity, please visit our website: www.orbis.org To apply, email your cover letter to HR@orbis.org

Need an excuse to visit Europe?

The International Ophthalmic Nurses Conference (IONA) will be holding its annual conference on the 5th and 6th of June

2009. Present a paper or attend,

see the website for further information

www.iona-online.org.au

Westwood Hall Leeds



NBV

Nurses Board of Victoria

Safeguarding the public

National Registration & Accreditation Scheme Frequently Asked Questions

To keep you informed, we have prepared these frequently asked questions on the National Registration and Accreditation Scheme and how it may affect you.

Q: How will I be informed of changes associated with National Registration?

A: Regular updates will be provided by our website, NEXUS, media and your workplace.

Q: How will this affect me?

A: The intention will be to streamline the registration process by reducing the red tape and to standardise accreditation processes.

Q: What will my registration cost be?

A: No fee structure has yet been set.

Q: Will my basic qualification, additional qualifications and endorsements be recognised in the same way?

A: There should be no disadvantage with National Registration, but details surrounding additional qualifications and endorsements have yet to be confirmed.

Q: Does National Registration mean I can work in any Australian State or Territory?

A: This is the aim of the National Registration & Accreditation Scheme, however the details have not yet been finalised.

Q: What will the registration renewal period be?

A: Currently Victorian Nurses annually renew their registration between November and March, however this may change under the new legislation that will govern the National Registration & Accreditation Scheme. We will keep you informed with any new developments.

Q: Where will I submit my application for registration and how long will the process take?

A: Unfortunately, no information is available at this time as to the administrative processes of the National Registration & Accreditation Scheme. However, all applications to the NBV need to be complete for efficient processing and it is expected that timelines will be dependant upon this same requirement for National Registration.

Q: Who should I speak with if I have questions regarding National Registration?

A: If you have any questions, please contact our call centre on 03 8635 1200 or 1300 362 309 (local call applies) or via email at generalenquiries@nbv.org.au.