Welcome to the latest *Ophthalmology* Newsletter. This will be produced every 2-3 months and lists the most recent literature in the field.

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**Ophthalmology**

November 2014

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WMCAG is a consortium of health librarians in the West Midlands.

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Cataract/Refractive


Ang M 2014 Cochrane Updated Intervention Review Manual small incision cataract surgery (MSICS) with posterior chamber intraocular lens versus extracapsular cataract extraction (ECCE) with posterior chamber intraocular lens for age-related cataract November 18 2014 (full text link)


Zhu, X., et al. (2014). Effect of pupil size on higher-order aberrations in high-myopic pseudophakic eyes with posterior staphyloma. Eye (Lond). (full text link)

Cornea


33(10): 1016-1021
1010.1097/ICO.000000000000198.

1010.1097/ICO.000000000000215.

1010.1097/ICO.000000000000216.

1010.1097/ICO.000000000000212.

Essen K Akpek (2014) New Cochrane Intervention Protocol Artificial corneas versus donor corneas for repeat corneal transplants November 5, 2014 (full text link)


1010.1097/ICO.000000000000214.

Herretes S (2014) Cochrane Updated Intervention Review Topical Corticosteroids as adjunctive therapy for bacterial keratitis October 16, 2014 (full text link)


Wang, D., et al. (2014) Differences in the corneal biomechanical changes after SMILE and LASIK Patients with myopia of greater than -6.00 dioptres (D) who underwent femtosecond laser-assisted LASIK, experienced a more significant decrease in corneal hysteresis, corneal resistance factor, and p1 and p2 areas than patients who underwent small incision lenticule extraction (SMILE). J Refract Surg 30(10): 702-707.

**Diabetic Retinopathy/Macular Edema**

Bio Space (2014) FDA Grants Priority Review for Genetech Lucentis in Diabetic Retinopathy

The FDA has accepted for filing a supplemental Biologics License Application and granted priority review of ranibizumab for the treatment of diabetic retinopathy. There has been no regulatory submission for this indication in the EU.


De Benedetto, U., et al. (2014) Macular dysfunction is common in both type 1 and type 2 diabetic patients without macular edema Retina 34(11): 2171-2177 (full text link)


Parodi, M. B., et al. (2014) INTRAVITREAL RANIBIZUMAB FOR NAIVE EXTRAFOveal CHOROIDAL NEOVASCULARIZATION SECONDARY TO AGE-RELATED MACULAR DEGENERATION Retina 34(11): 2167-2170 (link to pdf)


Virgili G (2014) Cochrane Updated Intervention Review Anti-vascular endothelial growth factor for...
diabetic macular oedema October 24, 2014 (full text link)


**Lens/Glaucoma**

Asaoka, R., et al. (2014) Identifying ‘preperimetric’ glaucoma in standard automated perimetry visual fields Invest Ophthalmol Vis Sci. (link to full text, manuscript only)


Hirooka, K., et al. (2014) Use of the structure-function relationship in detecting glaucoma progression in early glaucoma BMC Ophthalmol 14: 118 (full text link)


**Paediatrics**


Koenekoop, R. K., et al. (2014) Oral 9-cis retinoid for childhood blindness due to Leber congenital amaurosis caused by RPE65 or LRAT mutations: an open-label phase 1b trial Lancet. (full text link)

Kolometeyer, A. M., et al. (2014) Feasibility of retinal screening in a pediatric population with type 1 diabetes mellitus Ophthalmologists may use nonmydriatic retinal imaging to supplement the standard clinical exam to screen diabetic children aged as young as 2 years, according to newly published research.


Ma, X., et al. (2014) Effect of providing free glasses on children's educational outcomes in China: cluster randomized controlled trial. Bmj 349: g5740 (full text link)

Neffendorf, J. E., et al. (2014) Efficacy and safety of phenylephrine 2.5% with cyclopentolate 0.5% for retinopathy of prematurity screening in 1246 eye examinations. Eur J Ophthalmol: (on-line November 14)


Retina


Macular degeneration causes cells to die in the retina that permits vision in fine detail. The chronic disease has two forms: “dry” and “wet.”

The “wet” type occurs when abnormal blood vessels grow under the macula and leak blood and fluid. The “dry” form occurs when cells in the macula, a part of the eye located near the center of the retina, die. The “wet” form is much more common but less severe. Several treatments exist for “wet” macular degeneration, but only about a third of patients get significant vision improvement. There are no approved treatments for the “dry” form, which is much more common but less severe.

In HIV-infected people, NRTIs block an enzyme the virus uses to create more copies of itself. The new research shows the drugs also block the activity of a biological pathway responsible for activating inflammatory processes in the body.

It is that previously unrecognized quality that makes NRTIs promising for treating macular degeneration as well as graft-versus-host disease, a rarer ailment that can occur after a stem cell or bone marrow transplant, the researchers said.

University of Kentucky ophthalmologist Dr. Jayakrishna Ambati, who led the study published in the journal Science, said macular generation affects an estimated 50 million people worldwide.

“With the aging of the population, it is projected to affect 200 million people by the year 2020. It is therefore critical that we develop new and improved treatments for this disease, which is growing like an epidemic,” Ambati said.

Macular degeneration causes cells to die in the macula, a part of the eye located near the center of the retina that permits vision in fine detail.

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The “wet” type occurs when abnormal blood vessels grow under the macula and leak blood and fluid. The “dry” form occurs when cells in the macula break down.
In the new study, the NRTIs blocked a powerful collection of proteins that can kill cells in the retina, preserving vision in mice.

Researchers are planning for clinical trials in the coming months and it could be known in as soon as two to three years whether the drugs are effective in treating macular degeneration in people, Ambati said.

Because these inexpensive drugs are already approved by the U.S. Food and Drug Administration and have a good safety record, they could be "repurposed" rapidly to treat other illnesses, he added.


Simcock, P., et al. (2014) A safety audit of the first 10 000 intravitreal ranibizumab injections performed by nurse practitioners. Eye (Lond) 28(10): 1161-1164

Press Release 19th November 2014

Royal College of Ophthalmologists recommends UK regulatory bodies appraise use of bevacizumab for age related macular degeneration potentially saving NHS over £100 million a year

NHS Royal College of Ophthalmologists is calling on the regulators find a way to license bevacizumab or NICE to find a way to consider off-label use, for the treatment of AMD and thus save the NHS millions of pounds a year and relieve some of the capacity issues.

Uveitis


Simcock, P., et al. (2014) A safety audit of the first 10 000 intravitreal ranibizumab injections performed by nurse practitioners. Eye (Lond) 28(10): 1161-1164

Benitez del Castillo et al. (2014) Evaluation of the efficacy, safety, and acceptability of an eyelid warming device for the treatment of meibomian gland dysfunction (link at end of abstract to download free full text)


Medscape Conference News (2014) Megan Brooks Blinking Exercises may help ease evaporative eye disease (title links to Medscape write up; if you are not already registered you can either register, or read article below)

In patients with evaporative dry eye, blinking exercises can help decrease partial blinking and improve meibomian gland function and symptoms, according to a new study.

Detecting and quantifying partial blinking and blink training might be important in the overall treatment...
and management of evaporative dry eye, the investigators report.

David Murakami, MPH, OD, from TearScience Inc. in Morrisville, North Carolina, and Korb Associates in Boston, presented the results at the American Academy of Optometry 2014 Annual Meeting in Denver.

Partial blinking is closely involved in evaporative dry eye, he explained in an interview with Medscape Medical News.

“We are a focused society; we stare at computers, smartphones, and video games, and we are trained not to blink. If you aren't blinking fully, you don't express the oil from the glands,” he said.

We have hundreds of patients with evaporative dry eye who are on a blinking program,” Dr Murakami reported.

**Blink and Brain Training**

Dr Murakami presented results on 10 patients diagnosed with partial blinking, symptomatic evaporative dry eye, and reduced gland function. Their mean age was 53 years.

All patients completed a dry eye questionnaire, and habitual blinking behavior was recorded for 20 seconds and analyzed with the LipiView (TearScience Inc.), an ophthalmic imaging device used to measure the tear film lipid layer. In addition, the number of functional lower lid meibomian glands was determined with the Meibomian Gland Evaluator (TearScience Inc.).

Each patient was trained in and performed individualized blinking exercises for at least 8 weeks.

"I tell patients to really pause and deliberately close their eyes,” Dr Murakami said. "We are training the lids to be stronger, but we are also retraining the brain to do a full blink." A blinking reminder computer program helped remind the patients to do the exercises.

Patients were assessed before and after the intervention.

The percentage of partial blinks improved significantly with the intervention (70.9% vs 23.5%; \( P = .001 \)). In addition, symptoms decreased (10.1 vs 6.7; \( P = .02 \)) and the average number of functional glands increased (4.1 vs 5.9; \( P = .02 \)).

“Blinking exercises have been a well known antidote for dry eye symptoms due to non or partial blinking for many years,” Barry Farkas, OD, an optometrist in New York City, who was not involved in the study.

"What's interesting about this study,” Dr Massaro-Giordano said, "is that it shows you can improve the muscles involved in blinking. It's just like any muscle; if you work it, it improves."

But she said it is also important consider the eyelids. "Older patients may have lax lids or extropion, so even if they are blinking hard, it may be ineffective because that lower lid is just loose from age, prior surgery, or prior damage," she explained.

"You also have to look at the meibum. If you have meibum that is completely socked in and the concretions are really dense and it's very viscous, then you can blink all you want — it's not coming out."

This study was funded by TearScience Inc. Dr Murakami and his coauthors are employees of the company. Dr Farkas and Dr Massaro-Giordano have disclosed no relevant financial relationships.

In the News

Friedman, NJ (2014) Link to Hot Topics and Key Research Findings from AAO 2014

Scientists look into regenerating Retinal Cells (11:20am, 3 October 2014)

Scientists have discovered stem cells in the human eye which can be transformed into light-sensitive cells and potentially reverse blindness.

Links to the Science:


Sticky nanoparticles could “revolutionise” eye drops (12:49pm, 8 October 2014)

Nanoparticles which ‘stick’ to the cornea could improve the effectiveness of eye drops and may in future provide a route to treatments for age-related macular degeneration (AMD), according to new research from the University of Reading.

Viagra “may cause visual disturbance” in some men

NHS Choices October 2014

Links to the Science

Nivison-Smith L (2014) Sildenafil alters retinal function in mouse carriers of Retinitis Pigmentosa. Experimental Eye Research 2014, 128:11, 43-56 (link to full text) Log in required

Free Guide helps GP’s improve eye care knowledge

Ophthalmology Times (9 October 2014)

RCGP working to improve GP eye care knowledge

NHS Networks 29 September 2014

Monthly monitoring no longer required for Ranibizumab

Ophthalmology Times (3 October 2014)

Aflibercept boosts BVCA in DME. Ophthalmology Times (31 October)

Combination Glaucoma Drop Moves Toward Approval Ophthalmology Times 30 October 2014

Study examines link between MS and Uveitis

Ophthalmology Times, 29 October 2014
UK Charities drive retinal dystrophy consortium
Ophthalmology Times 24 October 2014

UK Vision Strategy puts eye health and sight loss on the CCG Agenda

An independent evaluation has concluded that the UK Vision Strategy’s commissioning for effectiveness and efficiency (CEE) project is helping to improve local provision of eye care services.

NHS Networks 7 November 2014

France asks Roche for data on use of cancer drug Avastin in eye

Reuters NICE Medicines Awareness 7 November 2014

ANSM has written to Roche for information on off-label uses of bevacizumab, which it is reviewing as cheaper alternative to ranibizumab for AMD. The data provided, combined with ANSM’s own research, will be examined early next year and recommendations expected first half of 2015.

10 Nov 2014 - VISION 2020 UK Dementia and Sight Loss Group: Eye examinations for people with dementia Factsheet

5 November 2014 College of Optometrists Launches Updated Guidance for Professional Practice

The College of Optometrists has launched its updated guidance. The guidance for professional practice (previously the Code of Ethics and Guidance for Professional Conduct) has been revised and updated with new sections on research, audit and also social media.

5 November Eye Health Leaflet (link to pdf of leaflet)

Devon Local Optical Committee has produced a leaflet to raise public awareness of the importance of eye health and regular eye tests

Gene Therapy Could Help With Inherited Blindness

NHS Choices December 2014

The following sources have been searched for evidence. Please contact the editor for further information

BNF Update 2014


The following sources have been searched for the latest evidence Please contact the editor for further information.

Acta Ophthalmologica
American Journal of Perinatology
American Journal of Ophthalmology
Annals of Emergency Medicine
Biospace
BMC Ophthalmology
BMC Res. Notes
Br Journal of Healthcare Assistants
BMJ
British Journal of Ophthalmology
Cataract and Refractive Surgery
Clinical Ophthalmology
Cochrane
Cornea
Current Opinion in Ophthalmology
Cut.Ocul Toxicology
Diabetes
Diabetologica
Diabetes Care
Early Human Development
European Journal of Neurology
European Journal of Ophthalmology
Experimental Eye Research
Eye
Faseb Journal
Graefes Arch of Clin Exp Ophthal
Indian J of Otorhino