

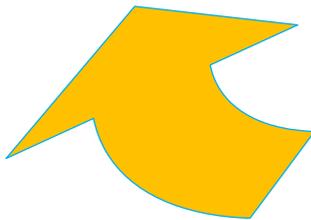


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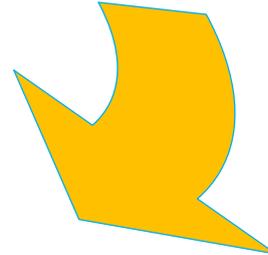


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OPHTHALMOLOGY UPDATE 5: Summer 2017



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Articles

Healthcare Database – Articles found in Medline (Selection of articles published: January 2017 – August 2017)

Items ordered as topics and by date of publication

CATARACTS

1. Proportion of undetected narrow angles or angle closure in cataract surgery referrals.

Author(s): Varma, Devesh K; Kletke, Stephanie N; Rai, Amandeep S; Ahmed, Iqbal Ike K

Source: Canadian journal of ophthalmology. Journal canadien d'ophtalmologie; Aug 2017; vol. 52 (no. 4); p. 366-372

Publication Date: Aug 2017

Publication Type(s): Journal Article

PubMedID: 28774518

Abstract: OBJECTIVE To determine the proportion of patients referred for cataract surgery consultation who had undetected narrow angles (primary angle closure suspect [PACS], primary angle closure [PAC], or primary angle closure glaucoma [PACG]). DESIGN Retrospective chart review. PARTICIPANTS Phakic patients referred by eye care providers (optometrists and ophthalmologists) to a tertiary centre for cataract management between July 1, 2010 and June 30, 2012 were identified and reviewed. METHODS Demographic, referral, and specialist assessment information, as well as biometric data, including anterior segment optical coherence tomography, were collected. Patients with undetected narrow angles were identified. Univariate tests and multivariable analyses were performed to determine risk factors for narrow angles or angle closure. RESULTS A total of 1229 patients were included. The mean patient age was 67.8 ± 13.0 years, 53.9% of patients were female, and 26.8% were Asian or South Asian. Of the sample population, 139 (11.3%) patients had PACS, 7 (0.6%) had PAC, and 12 (1.0%) had PACG. Overall, 158 (12.9%) patients had narrow angles or angle closure. Multivariable logistic regression using generalized estimating equations confirmed 3 independent predictors of PACS/angle closure: Asian race (odds ratio 2.82, $p < 0.001$), shorter axial length (AL) (odds ratio 1.25, $p = 0.03$), and smaller anterior chamber depth (ACD; odds ratio 33.3, $p < 0.001$). A patient of Asian race referred for cataract surgery with $ACD < 2.8$ mm and $AL < 23$ mm had a 52% probability of having PACS/angle closure (range 42%-62%) versus 3% if these 3 factors were not present. CONCLUSIONS Of patients referred for cataract surgery, 1.5% were found to have undetected narrow angles or angle closure, implying that gonioscopy may not be adequately performed in this patient population.

Database: Medline

2. All laser cataract surgery compared to femtosecond laser phacoemulsification surgery: corneal trauma.

Author(s): Mastropasqua, Leonardo; Mattei, Peter A; Toto, Lisa; Mastropasqua, Alessandra; Vecchiarino, Luca; Falconio, Gennaro; Doronzo, Emanuele

Source: International ophthalmology; Jun 2017; vol. 37 (no. 3); p. 475-482

Publication Date: Jun 2017

Publication Type(s): Journal Article

PubMedID: 27377068

Abstract: The aim of this study was to evaluate corneal tissue trauma after femtosecond laser-assisted cataract surgery (FLACS) and phacoemulsification (femtophaco surgery) compared to FLACS and nanolaser emulsification (all laser surgery). This is a prospective nonrandomized clinical study conducted at the Ophthalmology Clinic, University "G. d'Annunzio" of Chieti-Pescara, Italy, involving forty-two eyes of 42 patients candidates to cataract surgery. Patients were enrolled in two groups: femtophaco surgery (group 1 with 21 eyes) and all laser surgery (group 2 with 21 eyes). Main outcome measures included uncorrected visual acuity and distance corrected visual acuity, corneal endothelial cell count, and corneal thickness at the tunnel site and at the center of the cornea. Best correct visual acuity was not significantly different between the two groups. Postoperatively, a significant decrement of endothelial cell count at the center of the cornea was observed in group 1 compared with preoperative values at 90 days ($p < 0.001$) while it remained stable in group 2. The central corneal thickness showed a statistically significant increase for both groups that reached a maximum thickness at 7 days and then returned to presurgery levels after 90 days for group 1 and after 60 days for group 2. The tunnel corneal thickness showed a statistically significant increase for both groups that reached a maximum thickness at 7 days, which did not return to presurgery level for group 1 but did return to presurgery levels after 60 days for group 2. All laser surgery induced lower central endothelial cell loss and lower increase of corneal thickness compared to femtophaco surgery.

Database: Medline

3. Risk Factors for Cataracts Treated Surgically in Postmenopausal Women.

Author(s): Floud, Sarah; Kuper, Hannah; Reeves, Gillian K; Beral, Valerie; Green, Jane

Source: Ophthalmology; Aug 2016; vol. 123 (no. 8); p. 1704-1710

Publication Date: Aug 2016

Publication Type(s): Journal Article

PubMedID: 27282285

Abstract: **PURPOSE** To identify risk factors for cataracts treated surgically in postmenopausal women. **DESIGN** Population-based, prospective cohort study. **PARTICIPANTS** A total of 1 312 051 postmenopausal women in the UK Million Women Study, aged 56 years on average (standard deviation [SD], 4.8), without previous cataract surgery, hospital admission with cataracts, or cancer at baseline, were followed for cataracts treated surgically. **METHODS** Cox regression was used to calculate adjusted relative risks (RRs) for cataract surgery by lifestyle factors, treatment for diabetes, reproductive history, and use of hormonal therapies. **MAIN OUTCOME MEASURES** Cataract surgery identified by linkage to central National Health Service (NHS) records for inpatient and day-patient admissions (Hospital Episode Statistics for England and Scottish Morbidity Records in Scotland). **RESULTS** Overall, 89 343 women underwent cataract surgery during an average of 11 (SD, 3) years of follow-up. Women with diabetes were at greatest risk (diabetes vs. no diabetes RR, 2.90; 95% confidence interval [CI], 2.82-2.97). Other factors associated with an increased risk of cataract surgery were current smoking (current smokers of ≥ 15 cigarettes/day vs. never smokers RR, 1.26; 95% CI, 1.23-1.30) and obesity (body mass index [BMI] ≥ 30 vs. < 25 kg/m²; RR, 1.12; 95% CI, 1.10-1.14). **CONCLUSIONS** Diabetes, smoking, and obesity were risk factors for cataract surgery. Alcohol

use, physical activity, reproductive history, and use of hormonal therapies had little, if any, association with cataract surgery risk.

Database: Medline

DIABETES

4. Patients' preferences for involvement in the decision-making process for treating diabetic retinopathy.

Author(s): Marahrens, Lydia; Kern, Raimar; Ziemssen, Tjalf; Fritsche, Andreas; Martus, Peter; Ziemssen, Focke; Roeck, Daniel

Source: BMC ophthalmology; Aug 2017; vol. 17 (no. 1); p. 139

Publication Date: Aug 2017

Publication Type(s): Journal Article

PubMedID: 28793881

Available in full text at [BMC Ophthalmology](#) - from National Library of Medicine

Available in full text at [BMC Ophthalmology](#) - from ProQuest

Available in full text at [BMC Ophthalmology](#) - from BioMed Central

Abstract: BACKGROUND To assess factors associated with the preferred role of the attending ophthalmologist in the decision-making processes before treating diabetic retinopathy (DR). METHODS Cross-sectional study of 810 adults attending secondary diabetes care centers (NCT02311504). Diabetes patients were classified using a validated questionnaire in an ophthalmologist-dominant decision-making (ODM), shared decision-making (SDM) and patient-dominant decision-making (PDM) style. Multivariate logistic regression was performed to determine factors associated with the decision-making process. RESULTS A majority of 74.3% patients preferred SDM between ophthalmologist and patient, 17.4% patients wanted ODM, delegating the decision-making process to the ophthalmologist, 8.3% preferred the autonomous style of PDM. Patients wanting ODM were older (OR = 1.2 per decade, $p = 0.013$), had a lower level of education (OR = 1.4, $p = 0.001$) and had a higher frequency of consultations per year (OR = 1.3, $p = 0.022$). Patients with better basic knowledge in DR and memorizing their HbA1c level showed a higher propensity for SDM (OR = 1.1, $p = 0.037$). Patients wanting PDM had a significantly higher education (OR = 1.3, $p = 0.036$) and a greater desire for receiving information from self-help groups (OR = 1.3, $p = 0.015$). CONCLUSIONS The first evaluation of the general patient wishes for the treatment of DR confirmed the concept of SDM, which was favored by three quarters. In particular, older patients with low educational attainment wanted to delegate the decision-making process to the ophthalmologist. Amelioration of ophthalmologic education in diabetic programs might take up patients' propensity for SDM. Regardless of the decision-making group, nearly all patients wanted the medical and scientific information to be transferred by and shared with the ophthalmologist. TRIAL REGISTRATION The study was registered on www.clinicaltrials.gov (identifier: NCT02311504) on December 4th 2014.

Database: Medline

5. Tele-ophthalmology for Age-Related Macular Degeneration and Diabetic Retinopathy Screening: A Systematic Review and Meta-analysis.

Author(s): Kawaguchi, Atsushi; Sharafeldin, Noha; Sundaram, Aishwarya; Campbell, Sandy; Tennant, Matthew; Rudnisky, Christopher; Weis, Ezekiel; Damji, Karim F

Source: Telemedicine journal and e-health : the official journal of the American Telemedicine Association; Aug 2017

Publication Date: Aug 2017

Publication Type(s): Journal Article

PubMedID: 28783458

Abstract: BACKGROUND To synthesize high-quality evidence to compare traditional in-person screening and tele-ophthalmology screening . METHODS Only randomized controlled trials (RCTs) were included in this systematic review and meta-analysis. The intervention of interest was any type of tele-ophthalmology, including screening of diseases using remote devices. Studies involved patients receiving care from any trained provider via tele-ophthalmology, compared with those receiving equivalent face-to-face care. A search was executed on the following databases: Medline, EMBASE, EBM Reviews, Global Health, EBSCO-CINAHL, SCOPUS, ProQuest Dissertations and Theses Global, OCLC Papers First, and Web of Science Core Collection. Six outcomes of care for age-related macular degeneration (AMD), diabetic retinopathy (DR), or glaucoma were measured and analyzed. RESULTS Two hundred thirty-seven records were assessed at the full-text level; six RCTs fulfilled inclusion criteria and were included in this review. Four studies involved participants with diabetes mellitus, and two studies examined choroidal neovascularization in AMD. Only data of detection of disease and participation in the screening program were used for the meta-analysis. Tele-ophthalmology had a 14% higher odds to detect disease than traditional examination; however, the result was not statistically significant ($n = 2,012$, odds ratio: 1.14, 95% confidence interval (CI): 0.52-2.53, $p = 0.74$). Meta-analysis results show that odds of having DR screening in the tele-ophthalmology group was 13.15 (95% CI: 8.01-21.61; $p < 0.001$) compared to the traditional screening program. CONCLUSIONS The current evidence suggests that tele-ophthalmology for DR and age-related macular degeneration is as effective as in-person examination and potentially increases patient participation in screening.

Database: Medline

6. Utility of 1% Tropicamide in Improving the Quality of Images for Tele-Screening of Diabetic Retinopathy in Patients with Dark Irides.

Author(s): Banaee, Touka; Ansari-Astaneh, Mohammad-Reza; Pourreza, Hamidreza; Faal Hosseini, Fatemeh; Vatanparast, Maryam; Shoeibi, Nasser; Jami, Vajihe

Source: Ophthalmic epidemiology; Aug 2017; vol. 24 (no. 4); p. 217-221

Publication Date: Aug 2017

Publication Type(s): Journal Article

PubMedID: 28658588

Abstract: PURPOSE To compare the quality of fundus photographs taken before and after instillation of one drop of tropicamide. METHODS The 45° fundus photographs were taken with a non-mydratric fundus camera in three conditions of the pupil; pre-mydratric, 10 minutes after one drop of tropicamide, and fully dilated. Two photographs were taken in each condition; one centered on the

macula and the other on the optic disc. Two vitreoretinal specialists graded the images. RESULTS A total of 1768 fundus photographs of 149 diabetic patients with dark irides were included. There were more ungradable images (38.1% and 50.3%, graders 1 and 2, respectively) in the non-mydratric state than partially- (4.6% and 11.5%) or fully-dilated (15.4% and 10.0%) conditions ($p < 0.001$, both graders). Partially and fully dilated states had similar rates of ungradable images ($p = 0.56$ and $p = 0.54$, graders 1 and 2, respectively). Test-retest reliability (repeatability) was 92.5% and 74.3% for the two graders, respectively. Inter-grader agreement was moderate (Kappa = 0.50).CONCLUSION Non-mydratric fundus photographs have a high rate of ungradable images in patients with dark irides. Instillation of only one drop of tropicamide improves the quality of fundus photographs, which is not furthered by adding more drops. This strategy can be used in tele-ophthalmology programs.

Database: Medline

7. **Opening eyes to nanomedicine: Where we are, challenges and expectations on nanotherapy for diabetic retinopathy.**

Author(s): Campos, Elisa J; Campos, António; Martins, João; Ambrósio, António Francisco

Source: Nanomedicine : nanotechnology, biology, and medicine; Aug 2017; vol. 13 (no. 6); p. 2101-2113

Publication Date: Aug 2017

Publication Type(s): Journal Article Review

PubMedID: 28428052

Abstract: People affected with ocular diseases will significantly increase over the next decades, and, consequently, a substantial increase in health costs is expected. Diabetic retinopathy is the most common chronic complication of diabetes. The treatment of eye diseases affecting the posterior segment, such as diabetic retinopathy, is quite challenging due to the anatomy, physiology and biochemistry of the eye. Therefore, the development of new therapeutics for posterior eye diseases has been a major focus of pharmaceutical research in the area of vision sciences. Several nanosystems already offer efficient solutions for ophthalmological conditions, targeting internal eye tissues, as the retina, and many novel products are expected to appear hereafter. This review provides an insight on nanoparticle-based solutions for therapies directed to posterior segment of the eye diseases, particularly diabetic retinopathy, the present scenario, and the demands and expectations for the future.

Database: Medline

8. **Retinal nerve fibre layer thickness is reduced in metabolic syndrome.**

Author(s): Zarei, R; Anvari, P; Eslami, Y; Fakhraie, G; Mohammadi, M; Jamali, A; Afarideh, M; Ghajar, A; Heydarzade, S; Esteghamati, A; Moghimi, S

Source: Diabetic medicine : a journal of the British Diabetic Association; Aug 2017; vol. 34 (no. 8); p. 1061-1066

Publication Date: Aug 2017

Publication Type(s): Journal Article

PubMedID: 28430372

Available in full text at [Diabetic Medicine](#) - from John Wiley and Sons

Abstract: AIMS To investigate retinal nerve fibre layer (RNFL) thickness in people with metabolic syndrome (MetS) and healthy controls. METHODS A cross-sectional study was performed from March 2014 to January 2016. All participants underwent anthropometric and serological biochemical measurements, ophthalmological examination, and spectral-domain optical coherence tomography (SD-OCT). Individuals with elevated intraocular pressure, glaucoma, diabetic retinopathy and other ocular disorders were excluded. T-test, Chi square and general linear models were used to analyse the data. RESULTS In total, 278 eyes from 139 participants were investigated [median (interquartile range) age: 37 (32-43) years]. RNFL thickness was lower in the nasal superior ($107.8 \pm 19.5\mu\text{m}$) and temporal superior ($135.7 \pm 18.9\mu\text{m}$) sectors in MetS group compared with the control group ($114.6 \pm 22.4 \mu\text{m}$, $P = 0.013$ and $140.7 \pm 18.2 \mu\text{m}$, $P = 0.027$, respectively). After multiple adjustments for age, gender and the side of the examined [right (OD)/left (OS)] eye, MetS was independently associated with a lower RNFL thickness in the nasal superior ($\beta = 0.20$, $P = 0.009$) and temporal superior ($\beta = 0.14$, $P = 0.048$) sectors. RNFL thickness was significantly reduced in participants with higher numbers of metabolic abnormalities, independent of age, gender and the side of the examined eye ($P = 0.043$). CONCLUSION Our findings demonstrate that MetS is independently associated with reduced RNFL thickness, suggesting that neurodegeneration is implicated in pathogenesis of MetS.

Database: Medline

9. Predictors of Development and Progression of Retinopathy in Patients with Type 2 Diabetes: Importance of Blood Pressure Parameters.

Author(s): Cardoso, Claudia R L; Leite, Nathalie C; Dib, Eduardo; Salles, Gil F

Source: Scientific reports; Jul 2017; vol. 7 (no. 1); p. 4867

Publication Date: Jul 2017

Publication Type(s): Journal Article

PubMedID: 28687808

Available in full text at [Scientific Reports](#) - from ProQuest

Abstract: Diabetic retinopathy (DR) is a chronic microvascular complication associated a worse prognosis. We aimed to evaluate the predictors of development/progression of DR in a cohort of 544 high-risk patients with type 2 diabetes who had annual ophthalmologic examinations over a median follow-up of 6 years. Ambulatory blood pressure (BP) monitoring and aortic stiffness by carotid-femoral pulse wave velocity were performed. Multivariate Cox survival analysis examined the independent predictors of development or progression of DR. During follow-up, 156 patients either newly-developed or worsened DR. Patients who developed/progressed DR had longer diabetes duration, higher ambulatory and clinic BP levels, higher aortic stiffness, and poorer glycemic control than patients who did not developed/progressed DR. After adjustments for baseline retinopathy prevalence, age and sex, a longer diabetes duration ($p < 0.001$), higher baseline ambulatory BPs ($p = 0.013$, for 24-hour diastolic BP), and higher mean cumulative exposure of HbA1c ($p < 0.001$), clinic diastolic BP ($p < 0.001$) and LDL-cholesterol ($p = 0.05$) during follow-up were the independent predictors of development/progression of DR. BP parameters were only predictors of DR development. In conclusion, a longer diabetes duration, poorer glycemic and lipid control, and higher BPs were the main predictors of development/progression of DR. Mean cumulative clinic diastolic BP was the strongest BP-related predictor.

Database: Medline

10. Action on diabetic macular oedema: achieving optimal patient management in treating visual impairment due to diabetic eye disease.

Author(s): Gale, R; Scanlon, P H; Evans, M; Ghanchi, F; Yang, Y; Silvestri, G; Freeman, M; Maisey, A; Napier, J

Source: Eye (London, England); May 2017; vol. 31 ; p. S1

Publication Date: May 2017

Publication Type(s): Journal Article

PubMedID: 28490797

Abstract: This paper identifies best practice recommendations for managing diabetes and sight-threatening diabetic eye disease. The authors provide an update for ophthalmologists and allied healthcare professionals on key aspects of diabetes management, supported by a review of the pertinent literature, and recommend practice principles for optimal patient management in treating visual impairment due to diabetic eye disease. In people with diabetes, early optimal glycaemic control reduces the long-term risk of both microvascular and macrovascular complications. The authors propose more can and should be done to maximise metabolic control, promote appropriate behavioural modifications and encourage timely treatment intensification when indicated to ameliorate diabetes-related complications. All people with diabetes should be screened for sight-threatening diabetic retinopathy promptly and regularly. It is shown that attitudes towards treatment adherence in diabetic macular oedema appear to mirror patients' views and health behaviours towards the management of their own diabetes. Awareness of diabetic macular oedema remains low among people with diabetes, who need access to education early in their disease about how to manage their diabetes to delay progression and possibly avoid eye-related complications. Ophthalmologists and allied healthcare professionals play a vital role in multidisciplinary diabetes management and establishment of dedicated diabetic macular oedema clinics is proposed. A broader understanding of the role of the diabetes specialist nurse may strengthen the case for comprehensive integrated care in ophthalmic practice. The recommendations are based on round table presentations and discussions held in London, UK, September 2016.

Database: Medline

11. The Early Treatment Diabetic Retinopathy Study historical review and relevance to today's management of diabetic macular edema.

Author(s): Relhan, Nidhi; Flynn, Harry W

Source: Current opinion in ophthalmology; May 2017; vol. 28 (no. 3); p. 205-212

Publication Date: May 2017

Publication Type(s): Historical Article Journal Article Review

PubMedID: 28151747

Abstract: PURPOSE OF REVIEW To provide an historical review of the Early Treatment Diabetic Retinopathy Study (ETDRS) in the management of diabetic macular edema (DME), and to discuss its relevance to the management of DME. RECENT FINDINGS The ETDRS reported that argon laser treatment is beneficial in the management of 'clinically significant' DME. The study provided

guidelines for the treatment with focal and/or grid laser based on fluorescein angiographic patterns. In today's world, with the advent of optical coherence tomography, 'clinically significant' DME is now classified into center-involved DME (CI DME) and noncenter-involved DME (non-CI DME). Modified ETDRS focal/grid laser photocoagulation has been utilized in more recent clinical trials [diabetic retinopathy clinical research (DRCR) Protocols I and T] in combination with intravitreal injections. SUMMARY The ETDRS provided outcomes data for DME, both untreated and following laser therapy. In the management of patients with DME today, the modified ETDRS focal/grid laser photocoagulation treatments remain relevant in combination with anti-vascular endothelial growth factor (anti-VEGF) therapy as ophthalmologists and their patients choose how best to treat DME. Ongoing studies in eyes with DME, nonproliferative diabetic retinopathy, and good visual acuity will help further define the place of modified ETDRS focal/grid laser in the treatment of DME.

Database: Medline

12. En Face Doppler Optical Coherence Tomography Measurement of Total Retinal Blood Flow in Diabetic Retinopathy and Diabetic Macular Edema.

Author(s): Lee, ByungKun; Novais, Eduardo A; Waheed, Nadia K; Adhi, Mehreen; de Carlo, Talisa E; Cole, Emily D; Moulton, Eric M; Choi, WooJhon; Lane, Mark; Baumal, Caroline R; Duker, Jay S; Fujimoto, James G

Source: JAMA ophthalmology; Mar 2017; vol. 135 (no. 3); p. 244-251

Publication Date: Mar 2017

Publication Type(s): Comparative Study Journal Article

PubMedID: 28196198

Available in full text at [JAMA ophthalmology \[JAMA Ophthalmol\]](#) NLMUID: 101589539 - from EBSCOhost

Abstract: Importance Alterations in ocular blood flow play an important role in the pathogenesis and progression of diabetic retinopathy (DR). However, the measurement of retinal blood flow in clinical studies has been challenging. En face Doppler optical coherence tomography (OCT) provides an effective method for measuring total retinal blood flow (TRBF) in the clinic. Objective To investigate TRBF in eyes with DR of varying severity, with or without diabetic macular edema (DME), using en face Doppler OCT. Design, Setting, and Participants This was a cross-sectional study conducted from May 23, 2014, to January 11, 2016, which analyzed 41 eyes with DR from 31 diabetic patients, 20 eyes without DR from 11 diabetic patients, and 16 eyes from 12 healthy age-matched controls, all at the New England Eye Center in Boston, Massachusetts. Main Outcomes and Measures Participants were imaged with a high-speed, swept-source OCT prototype at 1050-nm wavelength using repeated en face Doppler OCT raster scans, comprising 600 × 80 axial scans and covering a 1.5 × 2-mm² area centered at the optic disc. The TRBF was automatically calculated using custom Matlab software. Results This study included 41 eyes with DR from 31 diabetic patients (mean [SD] age, 62.8 [13.4] years; 12 were female patients), 20 eyes without DR from 11 diabetic patients (mean [SD] age, 58.8 [10.1] years; 5 were female patients), and 16 eyes from 12 healthy age-matched controls (mean [SD] age, 57.9 [8.1] years; 8 were female participants). The mean (SD) TRBF was 28.0 (8.5) μL/min in the eyes with DME, 48.8 (13.4) μL/min in the eyes with DR but without DME, 40.1 (7.7) μL/min in the diabetic eyes without retinopathy, and 44.4 (8.3) μL/min in age-matched healthy eyes. A difference in TRBF between the eyes with DME that were treated and the eyes with DME that were not treated was not identified. The TRBF was consistently low in the eyes with DME regardless of DR severity. The eyes with moderate nonproliferative DR but without DME exhibited a wide range of TRBF from

31.1 to 75.0 $\mu\text{L}/\text{min}$, with the distribution being highly skewed. Conclusions and Relevance High-speed en face Doppler OCT can measure TRBF in healthy and diabetic eyes. Diabetic eyes with DME exhibited lower TRBF than healthy eyes ($P \leq .001$). Further longitudinal studies of TRBF in eyes with DR would be helpful to determine whether reduced TRBF is a risk factor for DME.

Database: Medline

13. Prevalence of referable, sight-threatening retinopathy in type 1 diabetes and its relationship to diabetes duration and systemic risk factors.

Author(s): Warwick, A N; Brooks, A P; Osmond, C; Krishnan, R; Medscape

Source: Eye (London, England); Feb 2017; vol. 31 (no. 2); p. 333-341

Publication Date: Feb 2017

Publication Type(s): Journal Article

PubMedID: 28128798

Abstract: Purpose The purpose of the study was to provide contemporary estimates for diabetic retinopathy (DR) prevalence in a well-defined UK cohort of patients with type 1 diabetes (T1DM) and investigate potential risk factors for proliferative diabetic retinopathy (PDR) and diabetic maculopathy. Patients and Methods Four hundred and sixty four T1DM patients in North Hampshire had T1DM duration, demographic and systemic risk factor data evaluated retrospectively alongside their DR status in 2010 using logistic regression analysis. Results Overall prevalence of any retinopathy, PDR, and maculopathy was 71.5%, 6.5%, and 10.8%, respectively. PDR and maculopathy prevalence were 0 and 0.7% for <10 years T1DM duration. PDR prevalence was 4%, 8%, and 16% for 10-19.9 years, 20-29.9, years and ≥ 30 years duration, respectively. Maculopathy prevalence was 15.6%, 18%, and 11% for 10-19.9 years, 20-29.9 years, and ≥ 30 years duration, respectively. In univariate analysis, PDR was associated with T1DM duration (odds ratio (OR) 1.07/year), age (OR 1.03/year), systolic blood pressure (OR 1.03/mmHg), and antihypertensive therapy (OR 10.63), while maculopathy was associated with duration (OR 1.03/year) and statin therapy (OR 2.83). In multivariate analysis, disease duration (OR 1.07/year) and antihypertensive therapy (OR 6.87) remained significantly associated with PDR, and maculopathy with statin therapy (OR 2.27). Conclusion This study confirms T1DM duration is a strong risk factor for sight-threatening DR. Maculopathy and PDR prevalence within 10 years of T1DM diagnosis is very low. PDR prevalence at 10-20 years was 4% and then doubled for every 10-year interval thereafter up to 16% with ≥ 30 years duration. Antihypertensive therapy and statin therapy were strongly associated with PDR and maculopathy, respectively.

Database: Medline

14. Determining diabetic retinopathy screening interval based on time from no retinopathy to laser therapy.

Author(s): Hughes, Daniel; Nair, Sunil; Harvey, John N

Source: Journal of medical screening; Nov 2016

Publication Date: Nov 2016

Publication Type(s): Journal Article

PubMedID: 27810985

Abstract: OBJECTIVES To determine the necessary screening interval for retinopathy in diabetic patients with no retinopathy based on time to laser therapy and to assess long-term visual outcome following screening. METHODS In a population-based community screening programme in North Wales, 2917 patients were followed until death or for approximately 12 years. At screening, 2493 had no retinopathy; 424 had mostly minor degrees of non-proliferative retinopathy. Data on timing of first laser therapy and visual outcome following screening were obtained from local hospitals and ophthalmology units. RESULTS Survival analysis showed that very few of the no retinopathy at screening group required laser therapy in the early years compared with the non-proliferative retinopathy group ($p < 0.001$). After two years, $<0.1\%$ of the no retinopathy at screening group required laser therapy, and at three years 0.2% (cumulative), lower rates of treatment than have been suggested by analyses of sight-threatening retinopathy determined photographically. At follow-up (mean 7.8 ± 4.6 years), mild to moderate visual impairment in one or both eyes due to diabetic retinopathy was more common in those with retinopathy at screening (26% vs. 5% , $p < 0.001$), but blindness due to diabetes occurred in only 1 in 1000. CONCLUSIONS Optimum screening intervals should be determined from time to active treatment. Based on requirement for laser therapy, the screening interval for diabetic patients with no retinopathy can be extended to two to three years. Patients who attend for retinal screening and treatment who have no or non-proliferative retinopathy now have a very low risk of eventual blindness from diabetes.

Database: Medline

GLAUCOMA

15. Undetected angle closure in patients with a diagnosis of open-angle glaucoma.

Author(s): Varma, Devesh K; Simpson, Sarah M; Rai, Amandeep S; Ahmed, Iqbal Ike K

Source: Canadian journal of ophthalmology. Journal canadien d'ophtalmologie; Aug 2017; vol. 52 (no. 4); p. 373-378

Publication Date: Aug 2017

Publication Type(s): Journal Article

PubMedID: 28774519

Abstract: OBJECTIVE The aim of this study was to identify the proportion of patients referred to a tertiary glaucoma centre with a diagnosis of open-angle glaucoma (OAG) who were found to have angle closure glaucoma. DESIGN Retrospective chart review. METHODS Consecutive new patients referred for glaucoma management to a tertiary centre between July 2010 and December 2011 were reviewed. Patients whose referrals for glaucoma assessment specified angle status as "open" were included. The data collected included glaucoma specialist's angle assessment, diagnosis, and glaucoma severity. The status of those with 180 degrees or more Shaffer angle grading of 0 was classified as "closed." RESULTS From 1234 glaucoma referrals, 179 cases were specified to have a diagnosis of OAG or when angles were known to be open. Of these, 16 (8.9%) were found on examination by the glaucoma specialist to have angle closure. Pseudoexfoliation was present in 4 of 16 patients (25%) in the missed angle-closure glaucoma (ACG) group and 22 of 108 patients (13.5%) in the remaining OAG group. There was no difference found in demographic or ocular biometric parameters between those with confirmed OAG versus those with missed ACG. CONCLUSIONS Almost 1 in 11 patients referred by ophthalmologists to a tertiary glaucoma centre with a diagnosis

of OAG were in fact found to have angle closure. Given the different treatment approaches for ACG versus OAG, this study suggests a need to strengthen angle evaluations.

Database: Medline

16. Normal tension glaucoma management: a survey of contemporary practice.

Author(s): Symes, Richard J; Mikelberg, Frederick S

Source: Canadian journal of ophthalmology. Journal canadien d'ophtalmologie; Aug 2017; vol. 52 (no. 4); p. 361-365

Publication Date: Aug 2017

Publication Type(s): Journal Article

PubMedID: 28774517

Abstract: OBJECTIVE The aim of this study was to investigate contemporary practice patterns with respect to normal tension glaucoma (NTG) management and to determine whether the 2 largest NTG trials have influenced ophthalmologists' clinical practice. METHODS A survey questionnaire was sent to ophthalmologists via the American Glaucoma Society, the Canadian Glaucoma Society, and the Canadian Ophthalmological Society. The questionnaire was designed to investigate ophthalmologists' usual practice with respect to NTG and the extent to which practice has been influenced by the Collaborative Normal Tension Glaucoma Study (CNTGS) and the Low pressure Glaucoma Treatment Study (LoGTS). RESULTS In total, 419 ophthalmologists completed the survey. Of these, 264 respondents were glaucoma subspecialists. The survey showed that 95% and 64% of ophthalmologists were familiar with the CNTGS and the LoGTS, respectively. Of the respondents, 70% indicated that they would initiate treatment in mild-to-moderate NTG without waiting for documented disease progression. Of the respondents, 61% of the total surveyed and 50% of the glaucoma subspecialists felt that the LoGTS results had no impact on their usual clinical practice. The first-choice topical drug for NTG was a prostaglandin analogue (88% of respondents) or brimonidine (10% of respondents). CONCLUSIONS Most ophthalmologists treat NTG more aggressively than recommended by the CTNGS protocol. Most ophthalmologists felt that the LoGTS results had no impact on their normal clinical practice. The prostaglandin analogues are, by far, the most popular choice of drug for contemporary management of NTG.

Database: Medline

17. Risk Factors for Rapid Glaucoma Disease Progression.

Author(s): Chan, Thomas Chun Wai; Bala, Chandra; Siu, Anna; Wan, Fiona; White, Andrew

Source: American journal of ophthalmology; Aug 2017; vol. 180 ; p. 151-157

Publication Date: Aug 2017

Publication Type(s): Multicenter Study Journal Article

PubMedID: 28624324

Abstract: PURPOSE To determine the intraocular and systemic risk factor differences between a cohort of rapid glaucoma disease progressors and nonrapid disease progressors. DESIGN Retrospective case-control study. METHODS Setting: Five private ophthalmology clinics. STUDY POPULATION Forty-eight rapidly progressing eyes (progression ≥ 1 dB mean deviation [MD]/year) and 486 non-rapidly progressing eyes (progression < 1 dB MD/year). Patients were eligible if they had a diagnosis of glaucoma from their ophthalmologist and if they had greater than or equal to 5

Humphrey visual fields (24-2) conducted. Patients were excluded if their sequential visual fields showed an improvement in MD or if they had greater than 5 dB MD variation in between visits. Patients with obvious neurologic fields were excluded. OBSERVATION PROCEDURE Clinical and demographic data (age, sex, central corneal thickness [CCT], intraocular pressure [IOP], refraction, medications), as well as medical, surgical, and ocular histories, were collected. MAIN OUTCOME MEASURES Risk factor differences between the cohorts were measured using the independent t test, Wald χ^2 , and binomial regression analysis. RESULTS Rapid progressors were older, had significantly lower CCT and baseline IOPs, and were more likely to have pseudoexfoliation, disc haemorrhages, ocular medication changes, and IOP-lowering surgery. They also had significantly higher rates of cardiovascular disease and hypotension. Subjects with cardiovascular disease were 2.33 times more likely to develop rapidly progressive glaucoma disease despite significantly lower mean and baseline IOPs. CONCLUSION Cardiovascular disease is an important risk factor for rapid glaucoma disease progression irrespective of IOP control.

Database: Medline

18. Long term outcomes after acute primary angle closure of Caucasian chronic angle closure glaucoma (CACG) patients.

Author(s): Fea, Antonio Maria; Dallorto, Laura; Lavia, Carlo; Pignata, Giulia; Rolle, Teresa; Aung, Tin

Source: Clinical & experimental ophthalmology; Jul 2017

Publication Date: Jul 2017

Publication Type(s): Journal Article

PubMedID: 28722309

Available in full text at [Clinical and Experimental Ophthalmology](#) - from John Wiley and Sons

Abstract: IMPORTANCE There is a lack of information about long term results of chronic angle closure glaucoma (CACG) following an acute primary angle closure (APAC) in Caucasian patients PURPOSE: To report morphological and functional long-term data of CACG eyes following a monolateral APAC attack and to provide a comparison with their fellow eyes DESIGN: Observational retrospective case series (Clinica Oculistica Universitaria, Ospedale Oftalmico, Turin) PARTICIPANTS: 57 consecutive patients (114 eyes) underwent long term follow-up analysis. METHODS Patients underwent ophthalmic assessment more than 5 years since the APAC attack. MAIN OUTCOME MEASURES Intraocular pressure (IOP), number of antiglaucoma medications, best corrected visual acuity (BCVA), angle assessment with gonioscopy, Vertical Cup-To-Disc ratio (VCDR), Standard automated perimetry (SAP). Comparisons were made between APAC attack eyes and fellow eyes and between phakic and pseudophakic eyes as observed at follow up. RESULTS Mean follow-up time was 5.86 ± 1.19 years. Outcomes showed a significant greater damage in the APAC eyes compared with fellow eyes both in structural (mean VCDR 0.61 ± 0.16 ; $p < 0.001$) and functional (Mean Deviation (MD): -7.98 ± 6.46 vs -4.83 ± 4.95 dB; $p < 0.001$) terms. Mean IOP was respectively 13.44 ± 2.78 and 13.89 ± 2.60 mmHg in APAC and fellow eyes ($p = 0.11$). 30/57 (53%) fellow eyes developed CACG (mean MD -7.74 ± 5.21 dB) even if prophylactic iridotomy was promptly performed. CONCLUSION AND RELEVANCE Our study prompts ophthalmologists to closely follow-up patients after an APAC attack to prevent potential glaucoma damage in both APAC and fellow eye.

Database: Medline

19. Association of Glaucoma-Related, Optical Coherence Tomography-Measured Macular Damage With Vision-Related Quality of Life.

Author(s): Prager, Alisa J; Hood, Donald C; Liebmann, Jeffrey M; De Moraes, C Gustavo; Al-Aswad, Lama A; Yu, Qi; Cioffi, George A; Blumberg, Dana M

Source: JAMA ophthalmology; Jul 2017; vol. 135 (no. 7); p. 783-788

Publication Date: Jul 2017

Publication Type(s): Journal Article

PubMedID: 28594977

Available in full text at [JAMA ophthalmology \[JAMA Ophthalmol\]](#) NLMUID: 101589539 - from EBSCOhost

Abstract: Importance Little is known about the association between structural macular damage and self-reported visual function of people with glaucoma. Objective To determine the association between vision-related quality of life among patients with primary open-angle glaucoma with structural macular retinal ganglion cell plus inner plexiform layer (RGC+IPL) loss identified by spectral-domain optical coherence tomography (SD-OCT) machine-generated deviation maps and thickness measurements. Design, Setting, and Participants This cross-sectional prospective study was conducted from March 1, 2014, to March 30, 2015, at the Department of Ophthalmology at Columbia University Medical Center. The participants were 107 patients who were enrolled in the study and represented the entire range of glaucomatous damage. All 214 eyes of the 107 participants underwent 10-2 visual field tests and SD-OCT scans, and all participants completed the 25-item National Eye Institute Visual Function Questionnaire (NEI VFQ-25). They also received ophthalmologic examination, including medical history review, best-corrected visual acuity, slitlamp biomicroscopy, intraocular pressure measurement, gonioscopy, dilated ophthalmoscopy, and standard automated perimetry. Macular RGC+IPL loss was determined by diffuse or focal patterns on SD-OCT-generated deviation maps (probability map that compared patients with aged-matched normative database) and thickness measurements. Main Outcomes and Measures Regression analyses to assess the association of NEI VFQ-25 scores (score range: 41.9-99.5; higher scores indicate better functioning) with patterns of RGC+IPL loss and with RGC+IPL thickness measurements. Results Of the 107 patients, 48 (45%) were men and the mean (SD) age was 65 (11) years. The self-reported race/ethnicity of participants consisted of 45 (46%) black, 47 (48%) white, and 6 (6%) "other" individuals. In the univariable analyses, patients with diffuse macular RGC+IPL loss had mean composite Rasch-calibrated NEI VFQ-25 scores that were 6.15 points lower than the scores of patients with focal damage ($\beta = -6.15$; 95% CI, -11.7 to -0.59; $P = .03$). The effect remained significant even after controlling for mean RGC+IPL thickness ($\beta = -7.64$; 95% CI, -14.2 to -1.03; $P = .02$). Conclusions and Relevance Characteristic patterns of glaucoma-related macular RGC+IPL loss appeared to be more important predictors of vision-related quality of life than thickness measures, with diffuse RGC+IPL loss as an indicator for diminished vision-related quality of life.

Database: Medline

20. Risk Factors for Secondary Glaucoma in Herpetic Anterior Uveitis.

Author(s): Hoeksema, Lisette; Jansonius, Nomdo M; Los, Leonoor I

Source: American journal of ophthalmology; Jun 2017

Publication Date: Jun 2017

Publication Type(s): Journal Article

PubMedID: 28666730

Available in full text at [American Journal of Ophthalmology](#) - from ProQuest

Abstract: PURPOSE To determine the incidence of elevated intraocular pressure (IOP) and secondary glaucoma in herpetic anterior uveitis (AU), due to either herpes simplex or varicella zoster virus, by using the Standardization of Uveitis Nomenclature (SUN) criteria, and to identify risk factors for the development of glaucoma. DESIGN Retrospective, observational cohort study. METHODS Patients with herpetic AU presenting themselves between 2001 and 2013 at the ophthalmology department of the University Medical Center Groningen were included. Main outcome measures were the incidence of elevated IOP and glaucoma and risk factors for the development of glaucoma. RESULTS Seventy-three herpetic AU patients were included. Ocular complications most commonly seen during follow-up for uveitis were elevated IOP (75%), keratitis (59%), dry eyes (34%), posterior synechiae (34%), cataract (32%), and glaucoma (15%). Glaucoma patients, in comparison to non-glaucoma patients, had a higher number of IOP peaks during their follow-up for uveitis ($p < 0.001$). The majority of patients with elevated IOP (91%) had this already at the start of the uveitis. Nineteen percent of the patients needed glaucoma surgery. CONCLUSIONS Using the SUN criteria, our study confirmed that elevated IOP and secondary glaucoma are major complications in herpetic AU. If an elevated IOP occurred, it was usually already present at the start of a uveitis episode. A risk factor for the development of glaucoma was the number of endured IOP peaks. Future studies are needed to evaluate whether early and prolonged use of antiviral and IOP-lowering medication may prevent glaucoma.

Database: Medline

21. Minimally invasive glaucoma surgery as primary stand-alone surgery for glaucoma.

Author(s): Kerr, Nathan M; Wang, Jing; Barton, Keith

Source: Clinical & experimental ophthalmology; May 2017; vol. 45 (no. 4); p. 393-400

Publication Date: May 2017

Publication Type(s): Journal Article Review

PubMedID: 27928879

Available in full text at [Clinical and Experimental Ophthalmology](#) - from John Wiley and Sons

Abstract: Recently, many new devices and procedures have been developed to lower intraocular pressure in a less invasive and purportedly safer manner than traditional glaucoma surgery. These new devices might encourage an earlier transition to surgery and reduce the long-term commitment to topical glaucoma medications with their associated compliance and intolerance issues. Although often seen as an adjunct to cataract surgery, a growing body of evidence suggests that primary minimally invasive glaucoma surgery may be a viable initial treatment option. New studies have shown that primary ab interno trabeculectomy (Trabectome, NeoMedix Inc., Tustin, CA, USA), trabecular micro-bypass stent insertion (iStent and iStent Inject, Glaukos Corporation, Laguna Hills, CA, USA), canalicular scaffolding (Hydrus, Invantis Inc., Irvine CA, USA), the ab interno gel Implant (XEN, Allergan, Dublin, Ireland) or supraciliary stenting (CyPass Micro-Stent, Alcon, Fort Worth, TX, USA) may lower the lowering intraocular pressure and/or topical medication burden in phakic or pseudophakic patients with glaucoma. This effect seems to last at least 12 months but reliable cost-effectiveness and quality of life indicators have not yet been established by investigator-initiated randomized trials of sufficient size and duration.

Database: Medline

22. Glaucoma.

Author(s): Jonas, Jost B; Aung, Tin; Bourne, Rupert R; Bron, Alain M; Ritch, Robert; Panda-Jonas, Songhomitra

Source: Lancet (London, England); May 2017

Publication Date: May 2017

Publication Type(s): Journal Article Review

PubMedID: 28577860

Available in full text at [Lancet, The](#) - from ProQuest

Abstract: Glaucoma is a heterogeneous group of diseases characterised by cupping of the optic nerve head and visual-field damage. It is the most frequent cause of irreversible blindness worldwide. Progression usually stops if the intraocular pressure is lowered by 30-50% from baseline. Its worldwide age-standardised prevalence in the population aged 40 years or older is about 3-5%. Chronic forms of glaucoma are painless and symptomatic visual-field defects occur late. Early detection by ophthalmological examination is mandatory. Risk factors for primary open-angle glaucoma-the most common form of glaucoma-include older age, elevated intraocular pressure, sub-Saharan African ethnic origin, positive family history, and high myopia. Older age, hyperopia, and east Asian ethnic origin are the main risk factors for primary angle-closure glaucoma. Glaucoma is diagnosed using ophthalmoscopy, tonometry, and perimetry. Treatment to lower intraocular pressure is based on topical drugs, laser therapy, and surgical intervention if other therapeutic modalities fail to prevent progression.

Database: Medline

23. Orofacial pain and headaches associated with exfoliation glaucoma.

Author(s): Noma, Noboru; Iwasa, Mayumi; Young, Andrew; Ikeda, Mariko; Hsu, Yung-Chu; Yamamoto, Maasa; Inoue, Kenji; Imamura, Yoshiki

Source: Journal of the American Dental Association (1939); May 2017

Publication Date: May 2017

Publication Type(s): Journal Article

PubMedID: 28501097

Abstract: BACKGROUND AND OVERVIEW Exfoliation syndrome is the most common identifiable cause of open-angle glaucoma. The authors report a case of exfoliation glaucoma in a patient who had orofacial pain. CASE DESCRIPTION A 77-year-old woman was treated at the orofacial pain clinic for left-sided facial pain and headaches of 7 months' duration. Her cataracts and open-angle glaucoma had been diagnosed approximately 3 years earlier. Her main symptoms were orofacial pain, eye redness, inflammation of the eyelids, and eyelid edema. Magnetic resonance imaging showed no evidence of intracranial or extracranial pathology. Hemicrania continua was considered as a possible diagnosis. Indomethacin was prescribed but did not affect her headaches. She then went to an ophthalmologist to rule out secondary headaches. Intraocular pressure was 13 millimeters of mercury in the right eye and 67 mm Hg in the left eye. The ophthalmologist made a diagnosis of exfoliation glaucoma, and the patient underwent surgical treatment for the glaucoma and cataracts. After surgery, she was free of symptoms, and intraocular pressure was 15 mm Hg in the left eye. CONCLUSIONS AND PRACTICAL IMPLICATIONS During differential diagnosis, dentists need to consider intraoral and systemic conditions that can mimic odontogenic or orofacial pain

disorders in the patient's medical history and that have a higher incidence associated with the patient's age.

Database: Medline

24. Early lens extraction with intraocular lens implantation for the treatment of primary angle closure glaucoma: an economic evaluation based on data from the EAGLE trial.

Author(s): Javanbakht, Mehdi; Azuara-Blanco, Augusto; Burr, Jennifer M; Ramsay, Craig; Cooper, David; Cochran, Claire; Norrie, John; Scotland, Graham

Source: BMJ open; Jan 2017; vol. 7 (no. 1); p. e013254

Publication Date: Jan 2017

Publication Type(s): Journal Article

PubMedID: 28087548

Available in full text at [BMJ Open](#) - from Highwire Press

Available in full text at [BMJ Open](#) - from ProQuest

Abstract: OBJECTIVE To investigate the cost-effectiveness of early lens extraction with intraocular lens implantation for the treatment of primary angle closure glaucoma (PACG) compared to standard care. DESIGN Cost-effectiveness analysis alongside a multicentre pragmatic two-arm randomised controlled trial. Patients were followed-up for 36 months, and data on health service usage and health state utility were collected and analysed within the trial time horizon. A Markov model was developed to extrapolate the results over a 5-year and 10-year time horizon. SETTING 22 hospital eye services in the UK. POPULATION Males and females aged 50 years or over with newly diagnosed PACG or primary angle closure (PAC). INTERVENTIONS Lens extraction compared to standard care (ie, laser iridotomy followed by medical therapy and glaucoma surgery). OUTCOME MEASURES Costs of primary and secondary healthcare usage (UK NHS perspective), quality-adjusted life years (QALYs) and the incremental cost-effectiveness ratio (ICER) for lens extraction versus standard care. RESULTS The mean age of participants was 67.5 (8.42), 57.5% were women, 44.6% had both eyes eligible, 1.4% were of Asian ethnicity and 35.4% had PAC. The mean health service costs were higher in patients randomised to lens extraction: £2467 vs £1486. The mean adjusted QALYs were also higher with early lens extraction: 2.602 vs 2.533. The ICER for lens extraction versus standard care was £14 284 per QALY gained at three years. Modelling suggests that the ICER may drop to £7090 per QALY gained by 5 years and that lens extraction may be cost saving by 10 years. Our results are generally robust to changes in the key input parameters and assumptions. CONCLUSIONS We find that lens extraction has a 67-89% chance of being cost-effective at 3 years and that it may be cost saving by 10 years. TRIAL REGISTRATION NUMBER ISRCTN44464607; Results.

Database: Medline

25. A National Survey of Glaucoma Specialists on the Preoperative (Trabeculectomy) Management of the Ocular Surface (.).

Author(s): Tailor, Rajen; Batra, Ruchika; Mohamed, Shabbir

Source: Seminars in ophthalmology; 2016; vol. 31 (no. 6); p. 519-525

Publication Date: 2016

Publication Type(s): Journal Article

PubMedID: 25489986

Available in full text at [Seminars in ophthalmology \[Semin Ophthalmol\]](#) NLMUID: 8610759 - from EBSCOhost

Abstract: BACKGROUND Preserved anti-glaucoma drops cause ocular surface disease (OSD), which is increasingly being recognized as a likely cause of trabeculectomy failure. AIM To determine the routine pre-trabeculectomy management of the ocular surface by glaucoma specialists. METHODS A questionnaire consisting of 11 questions was posted to 146 UK glaucoma specialists. RESULTS The first-time response rate was 43.8%. Regarding routine pre-operative management, 40.6% of specialists use preservative-free drops, 29.7% commence a drop holiday, and 53% advise lid hygiene. 42.1% prescribe lubricants, 50% prescribe topical steroids, 7.8% topical NSAIDs, and 34.4% systemic tetracyclines. 84.4% of specialists change their routine management if OSD is present. Pre-operative optimization of the ocular surface is viewed "necessary" by 48.4% and "beneficial" by 85.9%. CONCLUSION A wide variation exists in the routine pre-operative management of the ocular surface. Research to determine the impact of different pre-operative interventions upon trabeculectomy outcomes is required.

Database: Medline

26. Is Estrogen a Therapeutic Target for Glaucoma?

Author(s): Dewundara, Samantha S; Wiggs, Janey L; Sullivan, David A; Pasquale, Louis R

Source: *Seminars in ophthalmology*; 2016; vol. 31 (no. 1-2); p. 140-146

Publication Date: 2016

Publication Type(s): Research Support, Non-u.s. Gov't Research Support, N.i.h., Extramural Journal Article Review

PubMedID: 26959139

Available in full text at [Seminars in ophthalmology \[Semin Ophthalmol\]](#) NLMUID: 8610759 - from EBSCOhost

Abstract: This article's objective is to provide an overview of the association between estrogen and glaucoma. A literature synthesis was conducted of articles published in peer-reviewed journals screened through May 5, 2015, using the PubMed database. Keywords used were "estrogen and glaucoma," "reproductive factors and glaucoma," and "estrogen, nitric oxide and eye." Forty-three journal articles were included. Results indicated that markers for lifetime estrogen exposure have been measured by several studies and show that the age of menarche onset, oral contraceptive (OC) use, bilateral oophorectomy, age of menopause onset and duration between menarche to menopause are associated with primary open-angle glaucoma (POAG) risk. The Blue Mountain Eye Study found a significantly increased POAG risk with later (>13 years) compared with earlier (≤12 years) age of menarche. Nurses' Health Study (NHS) investigators found that OC use of greater than 5 years was associated with a 25% increased risk of POAG. The Mayo Clinic Cohort Study of Oophorectomy and Aging found that women who underwent bilateral oophorectomy before age 43 years had an increased risk of glaucoma. The Rotterdam Study found that women who went through menopause before reaching the age of 45 years had a higher risk of open-angle glaucoma (2.6-fold increased risk), while the NHS showed a reduced risk of POAG among women older than 65 who entered menopause after age ≥ 54 years. Increased estrogen states may confer a reduced risk of glaucoma or glaucoma-related traits such as reduced intraocular pressure (IOP). Pregnancy, a hyperestrogenemic state, is associated with decreased IOP during the third trimester. Though the role of postmenopausal hormone (PMH) use in the reduction of IOP is not fully conclusive, PMH use may reduce the risk of POAG. From a genetic epidemiologic perspective, estrogen metabolic

pathway single nucleotide polymorphisms (SNPs) were associated with POAG in women and polymorphisms in endothelial nitric oxide synthase, a gene receptive to estrogen regulation, are associated with glaucoma. The study concluded that increasing evidence suggests that lifetime exposure to estrogen may alter the pathogenesis of glaucoma. Estrogen exposure may have a neuroprotective effect on the progression of POAG but further studies need to confirm this finding. The role of sex-specific preventive and therapeutic treatment may be on the horizon.

Database: Medline

27. Is Estrogen a Therapeutic Target for Glaucoma?

Author(s): Dewundara, Samantha S; Wiggs, Janey L; Sullivan, David A; Pasquale, Louis R

Source: Seminars in ophthalmology; 2016; vol. 31 (no. 1-2); p. 140-146

Publication Date: 2016

Publication Type(s): Research Support, Non-u.s. Gov't Research Support, N.i.h., Extramural Journal Article Review

PubMedID: 26959139

Available in full text at [Seminars in ophthalmology \[Semin Ophthalmol\] NLMUID: 8610759](#) - from EBSCOhost

Abstract: This article's objective is to provide an overview of the association between estrogen and glaucoma. A literature synthesis was conducted of articles published in peer-reviewed journals screened through May 5, 2015, using the PubMed database. Keywords used were "estrogen and glaucoma," "reproductive factors and glaucoma," and "estrogen, nitric oxide and eye." Forty-three journal articles were included. Results indicated that markers for lifetime estrogen exposure have been measured by several studies and show that the age of menarche onset, oral contraceptive (OC) use, bilateral oophorectomy, age of menopause onset and duration between menarche to menopause are associated with primary open-angle glaucoma (POAG) risk. The Blue Mountain Eye Study found a significantly increased POAG risk with later (>13 years) compared with earlier (≤ 12 years) age of menarche. Nurses' Health Study (NHS) investigators found that OC use of greater than 5 years was associated with a 25% increased risk of POAG. The Mayo Clinic Cohort Study of Oophorectomy and Aging found that women who underwent bilateral oophorectomy before age 43 years had an increased risk of glaucoma. The Rotterdam Study found that women who went through menopause before reaching the age of 45 years had a higher risk of open-angle glaucoma (2.6-fold increased risk), while the NHS showed a reduced risk of POAG among women older than 65 who entered menopause after age ≥ 54 years. Increased estrogen states may confer a reduced risk of glaucoma or glaucoma-related traits such as reduced intraocular pressure (IOP). Pregnancy, a hyperestrogenemic state, is associated with decreased IOP during the third trimester. Though the role of postmenopausal hormone (PMH) use in the reduction of IOP is not fully conclusive, PMH use may reduce the risk of POAG. From a genetic epidemiologic perspective, estrogen metabolic pathway single nucleotide polymorphisms (SNPs) were associated with POAG in women and polymorphisms in endothelial nitric oxide synthase, a gene receptive to estrogen regulation, are associated with glaucoma. The study concluded that increasing evidence suggests that lifetime exposure to estrogen may alter the pathogenesis of glaucoma. Estrogen exposure may have a neuroprotective effect on the progression of POAG but further studies need to confirm this finding. The role of sex-specific preventive and therapeutic treatment may be on the horizon.

Database: Medline

OTHER CONDITIONS

28. Association of Upper Eyelid Ptosis Repair and Blepharoplasty With Headache-Related Quality of Life.

Author(s): Bahceci Simsek, Ilke

Source: JAMA facial plastic surgery; Jul 2017; vol. 19 (no. 4); p. 293-297

Publication Date: Jul 2017

Publication Type(s): Journal Article

PubMedID: 28253391

Available in full text at [JAMA facial plastic surgery \[JAMA Facial Plast Surg\]](#) NLMUID: 101589532 - from EBSCOhost

Abstract: Importance Headache can be a functional indication for ptosis repair and blepharoplasty. Objective To evaluate the changes in headache-related quality of life in patients who underwent upper eyelid ptosis repair or blepharoplasty. Design, Setting, and Participants A prospective cohort study was conducted among 108 patients who underwent standard upper eyelid blepharoplasty and 44 patients who underwent ptosis repair (levator resection, Müller muscle resection, or frontalis suspension) for obscuration of the superior visual field at an ophthalmology clinic's oculoplastic department from September 1, 2014, to September 1, 2015. A validated headache-related quality-of-life survey, the Headache Impact Test-6 (HIT), was administered preoperatively and postoperatively to patients who had tension-type headache. The minimum time interval after the operation was 3 months (mean, 13.5 weeks; range, 12-17 weeks). Main Outcomes and Measures Postoperative HIT scores, decline in HIT scores, and marginal reflex distance test 1 scores. Results Of the 108 patients (66 women and 42 men; mean [SD] age, 49.8 [10.7] years) who underwent blepharoplasty and the 44 patients (26 women and 18 men; mean [SD] age, 45.6 [17.8] years) who underwent ptosis repair, 38 (35.2%) and 28 (63.6%), respectively, had symptoms of tension-type headaches. In both groups, the mean (SD) postoperative HIT scores were statistically significantly better than the preoperative HIT scores (blepharoplasty group: preoperative score, 55.9 [6.6] vs postoperative score, 46.4 [9.0]; ptosis repair group: preoperative score, 60.0 [7.2] vs postoperative score, 42.3 [9.3]; $P = .001$). In the patients who underwent ptosis repair, the mean (SD) preoperative HIT score was significantly higher than in those who underwent blepharoplasty (60.0 [7.2] vs 55.9 [6.6]; $P = .007$) and the postoperative HIT score was significantly lower than those who underwent blepharoplasty (42.3 [9.3] vs 46.4 [9.0]; $P = .03$). The mean (SD) decline in the HIT score was significantly higher in patients who underwent ptosis repair than in those who underwent blepharoplasty (17.8 [9.9] vs 9.5 [8.6]; $P = .002$). For patients who underwent ptosis repair, there was a statistically significant negative correlation between the results on the marginal reflex distance test 1 (median, 1.82; minimum, 1.0; maximum, 3.5) and change in the HIT score (median, 18; minimum, 0; maximum, 30) ($P = .005$; $r = -0.645$). In patients who underwent ptosis repair, the mean (SD) difference between the preoperative and postoperative HIT scores was significantly higher for the patients who underwent levator resection (3.1 [0.3]) than for those who underwent Müller muscle resection (1.5 [0.7]) and frontalis suspension procedures (1.9 [0.7]) ($P = .001$). Conclusions and Relevance The operations for ptosis and blepharoptosis provide significant relief for tension-type headache and result in improved headache-related quality of life. As a result, tension-type headache

can be a functional indication for upper eyelid blepharoplasty and ptosis repair, especially for patients with lower results on the marginal reflex distance test 1. Level of Evidence 3.

Database: Medline

29. Incidence, risk factors and management of intractable diplopia.

Author(s): Newsham, David; O'Connor, Anna R; Harrad, Richard A

Source: The British journal of ophthalmology; Jun 2017

Publication Date: Jun 2017

Publication Type(s): Journal Article

PubMedID: 28659388

Available in full text at [British Journal of Ophthalmology](#) - from Highwire Press

Abstract: AIMS There is a paucity of literature concerning intractable diplopia. The aims of this study were to determine the incidence of intractable diplopia in the UK, identify the causes and any associated risk factors, establish how cases are managed and if the treatment is successful and tolerated. METHODS A 1-year prospective observational study was undertaken via the British Ophthalmological Surveillance Unit (BOSU). This involved implementation of a reporting mechanism, which then triggered distribution of an incident questionnaire to explore clinical details concerning each case and a follow-up questionnaire 6 months later to explore how the case had been managed. RESULTS The incidence of intractable diplopia was 53 cases per year. The most common preceding events were strabismus surgery (32%), no known preceding event, that is, spontaneous (25%), severe head trauma (8%), cataract surgery (6%) and vitrectomy (6%). In the at-risk age group of 7 years and above, the incidence of intractable diplopia following strabismus surgery is 1 in 494 (95% CI; 1 in 296 to 790) cases. A total of nine different treatments were used in the management, with many patients receiving between two and four different methods. The overall success rate was poor, but most effective were opaque intraocular lenses (IOLs) (86%) and opaque contact lenses (50%). CONCLUSION Intractable diplopia is a relatively rare but important condition. The main risk factor is a pre-existing strabismus, and careful counselling is needed when planning surgical correction in patients with no demonstrable binocular function. Treatment success of intractable diplopia is high when using opaque IOLs, although with additional risk, but is often disappointing via other methods where it can be difficult to eradicate the diplopia successfully.

Database: Medline

30. Ocular Emergencies: Red Eye.

Author(s): Tarff, Andreina; Behrens, Ashley

Source: The Medical clinics of North America; May 2017; vol. 101 (no. 3); p. 615-639

Publication Date: May 2017

Publication Type(s): Journal Article Review

PubMedID: 28372717

Abstract: "Red eye" is used as a general term to describe irritated or bloodshot eyes. It is a recognizable sign of an acute/chronic, localized/systemic underlying inflammatory condition. Conjunctival injection is most commonly caused by dryness, allergy, visual fatigue, contact lens overwear, and local infections. In some instances, red eye can represent a true ocular emergency that should be treated by an ophthalmologist. A comprehensive assessment of red eye conditions is

required to preserve the patients visual function. Severe ocular pain, significant photophobia, decreased vision, and history of ocular trauma are warning signs demanding immediate ophthalmological consultation.

Database: Medline

Success rate of nurse-led everting sutures for involitional lower lid entropion.

Author(s): Mohammed, B R; Ford, R

Source: Eye (London, England); May 2017; vol. 31 (no. 5); p. 732-735

Publication Date: May 2017

Publication Type(s): Journal Article

PubMedID: 28085138

Abstract: Purpose To evaluate safety and long-term recurrence rate of entropion in patients having everting sutures (ES) for involitional entropion by ophthalmic nurses in a real clinical setting. Patients and methods Retrospective notes review of all patients who had an outpatient ES by our trained ophthalmic nurses over 2 year's time period. Outcome measures were complication and recurrence rates. Those with less than 3 years' recorded follow-up were contacted by paper questionnaire. Results 90 lids of 82 patients analysed. Mean age was 78 (range 54-97). In total, 82% had no entropion surgery before, whereas 13% had previous ES and 5% one or more other procedures. Questionnaires were sent to 38, with return rate of 81%. Recurrence rate was 21.1% after 36-60 months follow up from nurse-performed ES, with mean time to recurrence of 15 months (SD 13 months). A total of 32% of patients died during the follow-up period. Mean time between the procedure and death is 20.5 months. When ES were repeated twice (11 patients), recurrence rate was still 20%. No patients had any complications. Conclusion ES can be safely performed by ophthalmic nurses, with success rate comparable to the same technique performed by ophthalmologists.

Database: Medline

31. Nurse-led ranibizumab intravitreal injections in wet age-related macular degeneration: a literature review.

Author(s): Gregg, Emma

Source: Nursing standard (Royal College of Nursing (Great Britain)) : 1987; Apr 2017; vol. 31 (no. 33); p. 44-52

Publication Date: Apr 2017

Publication Type(s): Journal Article

PubMedID: 28399772

Abstract: Aim The aim of this literature review was to explore the development of the role of specialist ophthalmic nurses in delivering ranibizumab intravitreal injections to patients with wet age-related macular degeneration (AMD), and to evaluate their contribution to reducing capacity pressures in medical retina services, while maintaining safe and effective standards of care. Method A systematic literature search was undertaken to identify relevant articles published between January 2000 and June 2015. A search of electronic databases was undertaken, and selected relevant journals were searched manually. A free text and subject heading search strategy was conducted, in which the abstracts of publications identified for review were assessed for relevance. Inclusion criteria were: nurses delivering ranibizumab intravitreal treatment; studies performed in

the UK and other countries; and patients with AMD, diabetic macular oedema or central retinal vein occlusion receiving nurse-led ranibizumab (Lucentis) intravitreal treatment. Findings Five studies were identified from the literature search, which audited a total of 31,303 injections delivered by nurse practitioners between January 2007 and November 2013. The visual outcomes and the rate of complications from intravitreal injections delivered by trained ophthalmic nurse practitioners were comparable to intravitreal injections delivered by ophthalmologists. Four of the five studies reported increased patient satisfaction, patients consenting to nurse-delivered intravitreal injections, favourable pain experience, and absence of complaints. Conclusion Practice innovation is an example of a quality, innovation, productivity and prevention process. Role expansion, in which specialist ophthalmic nurses deliver intravitreal injections, has been shown to be economical, safe and effective. It enables timely delivery of the service, thereby preventing irreversible blindness for individuals with wet AMD.

Database: Medline

32. Botulinum toxin for the treatment of strabismus.

Author(s): Rowe, Fiona J; Noonan, Carmel P

Source: The Cochrane database of systematic reviews; Mar 2017; vol. 3 ; p. CD006499

Publication Date: Mar 2017

Publication Type(s): Meta-analysis Journal Article Review

PubMedID: 28253424

Available in full text at [Cochrane Library, The](#) - from John Wiley and Sons

Abstract: BACKGROUND The use of botulinum toxin as an investigative and treatment modality for strabismus is well reported in the medical literature. However, it is unclear how effective it is in comparison to other treatment options for strabismus. OBJECTIVES The primary objective was to examine the efficacy of botulinum toxin therapy in the treatment of strabismus compared with alternative conservative or surgical treatment options. This review sought to ascertain those types of strabismus that particularly benefit from the use of botulinum toxin as a treatment option (such as small angle strabismus or strabismus with binocular potential, i.e. the potential to use both eyes together as a pair). The secondary objectives were to investigate the dose effect and complication rates associated with botulinum toxin. SEARCH METHODS We searched CENTRAL (which contains the Cochrane Eyes and Vision Trials Register) (2016, Issue 6), Ovid MEDLINE, Ovid MEDLINE In-Process and Other Non-Indexed Citations, Ovid MEDLINE Daily, Ovid OLDMEDLINE (January 1946 to July 2016), Embase (January 1980 to July 2016), Latin American and Caribbean Literature on Health Sciences (LILACS) (January 1982 to July 2016), the ISRCTN registry (www.isrctn.com/editAdvancedSearch), ClinicalTrials.gov (www.clinicaltrials.gov), and the World Health Organization (WHO) International Clinical Trials Registry Platform (ICTRP) (www.who.int/ictrp/search/en). We did not use any date or language restrictions in the electronic searches for trials. We last searched the electronic databases on 11 July 2016. We handsearched the British and Irish Orthoptic Journal, Australian Orthoptic Journal, proceedings of the European Strabismological Association (ESA), International Strabismological Association (ISA) and International Orthoptic Association (IOA) (www.liv.ac.uk/orthoptics/research/search.htm) and American Academy of Paediatric Ophthalmology and Strabismus meetings (AAPOS). We contacted researchers who are active in this field for information about further published or unpublished studies. SELECTION CRITERIA We included randomised controlled trials (RCTs) of any use of botulinum toxin treatment for strabismus. DATA COLLECTION AND ANALYSIS Two review authors independently selected studies and extracted data. We used standard methods expected by Cochrane and assessed the

certainty of the evidence using GRADE. We defined ocular alignment as an angle of deviation of less than or equal to 10 prism dioptres. MAIN RESULTS Six RCTs were eligible for inclusion. We judged the included studies as at a mixture of low, unclear and high risk of bias. We did not consider any of the included studies as at low risk of bias for all domains. Two trials conducted in Spain (102 people, number of eyes not specified) compared botulinum toxin with surgery in children that required retreatment for acquired or infantile esotropia. These two studies provided low-certainty evidence that children who received botulinum toxin may have a similar or slightly reduced chance of achieving ocular alignment (pooled risk ratio (RR) 0.91, 95% confidence interval (CI) 0.71 to 1.16), binocular single vision (RR 0.88, 95% CI 0.63 to 1.23), sensory fusion (RR 0.88, 95% CI 0.63 to 1.23) and stereopsis (RR 0.86, 95% CI 0.59 to 1.25) compared with children who received surgery. One trial from Canada compared botulinum toxin with surgery in 30 adults (30 eyes) with horizontal strabismus and reported a reduced chance of ocular alignment with botulinum toxin (RR 0.38, 95% CI 0.17 to 0.85; low-certainty evidence). One trial in the UK suggested that botulinum toxin may result in a similar or slightly improved chance of ocular alignment in people with acute onset sixth nerve palsy compared with observation (RR 1.19, 95% CI 0.96 to 1.48; 47 participants, low-certainty evidence). Very low-certainty evidence from one trial from Brazil suggested that adjuvant botulinum toxin in strabismus surgery may increase the chances of ocular alignment compared with strabismus surgery alone (RR 1.83, 95% CI 0.41 to 8.11; 23 participants). One trial from China of 47 participants (94 eyes) suggested that people receiving botulinum toxin combined with sodium hyaluronate may have a similar or slightly reduced chance of achieving ocular alignment compared with botulinum toxin alone (RR 0.81, 95% CI 0.36 to 1.82; low-certainty evidence). Reported complications in people given botulinum toxin in the included trials included ptosis (range 9% to 41.66%) and vertical deviation (range 8.3% to 18.51%). Ptosis occurred less frequently when treated with botulinum toxin combined with sodium hyaluronate compared to botulinum toxin alone. AUTHORS' CONCLUSIONS Most published literature on the use of botulinum toxin in the treatment of strabismus consists of retrospective studies, cohort studies or case reviews. Although these provide useful descriptive information, clarification is required as to the effective use of botulinum toxin as an independent treatment modality. Six RCTs on the therapeutic use of botulinum toxin in strabismus, graded as low and very low-certainty evidence, have shown varying responses. These include a lack of evidence for effect of botulinum toxin on reducing visual symptoms in acute sixth nerve palsy, poor response in people with horizontal strabismus without binocular vision, similar or slightly reduced achievement of successful ocular alignment in children with esotropia and potential increased achievement of successful ocular alignment where surgery and botulinum toxin are combined. Further high quality trials using robust methodologies are required to compare the clinical and cost effectiveness of various forms of botulinum toxin (e.g. Dysport, Xeomin, etc), to compare botulinum toxin with and without adjuvant solutions and to compare botulinum toxin to alternative surgical interventions in strabismus cases with and without potential for binocular vision.

Database: Medline

33. Nylon Hang Back Sutures in the Repair of Secondary Ptosis Following Overcorrected Dysthyroid Upper Eyelid Retraction.

Author(s): Shah-Desai, Sabrina; Azarbod, Parham; Szamocki, Sonia; Rose, Geoffrey E

Source: Ophthalmic plastic and reconstructive surgery; 2016; vol. 32 (no. 1); p. 61-64

Publication Date: 2016

Publication Type(s): Journal Article

PubMedID: 26505232

Abstract: PURPOSE Repair of blepharoptosis secondary to surgical overcorrection of thyroid related primary upper eyelid retraction (secondary ptosis) can be unpredictable. This study describes the long-term results of "hang-back" nylon sutures, for an anterior approach surgical repair of secondary ptosis. METHODS This was a retrospective consecutive case note review of patients referred with secondary ptosis (after prior upper eyelid lowering for thyroid eye disease), under the care of a single surgeon at Moorfields Eye Hospital & subsequently at Barking Havering Redbridge University Hospitals NHS Trust (SSD). In accordance with hospital trust policy, this audit was registered and all patient data was anonymized, ethical approval was not required. Patients with secondary ptosis underwent surgery under local anesthesia through an upper eyelid skin-crease incision. The anterior portion of the levator muscle was freed from all scar tissues and its action re-established on the superior part of the upper tarsal plate, using two 6-0 nylon hang-back sutures placed centrally and medially. The margin reflex distance 1 (MRD1), skin crease height, eyelid contour, symmetry of eyelid position (difference in margin reflex distance 1 <1 mm in both eyes) and degree of lagophthalmos were assessed from clinical notes preoperative and postoperatively at 1, 3, and 12 months. RESULTS Surgery was undertaken in 14 eyelids in 13 patients (3 males; 23%), with 9/14 (65%) eyelids having undergone attempted repair of ptosis prior to referral; in 7 of the 8 (88%) eyelids with previous failed ptosis repair, the referring surgeon had used soluble hang-back sutures. As compared with an average preoperative margin reflex distance 1 of 0.9 mm (median 1, range: -1 to 2 mm), the average margin reflex distance 1 at 3 months was 3.0 mm (median 3, range: 2.5-4 mm; $p < 0.0001$) and 2.8 mm at 12-month follow up (median 3, range: 2-4mm; $p < 0.0001$). The upper eyelid central skin crease height changed from a preoperative mean of 9.8 mm (median 9, range: 5-15 mm) to 8.7 mm at 3 months (median 8, range: 7-12 mm; $p = 0.1412$) and 8.9 mm at 12-month follow up (median 9, range: 7-11 mm; $p = 0.2930$). Only 3 patients had postoperative lagophthalmos (one patient 3 mm and two patients 1 mm) at 3 months after surgery, this resolving by the 12-month postoperative visit. Thirteen cases (93%) had a good functional, symmetrical, and aesthetic result at 12 month follow up, with a late recurrence of ptosis in 1 patient (7%).CONCLUSION The "hang-back" semi-permanent suture technique for repair of over-corrected upper eyelid lowering in thyroid eye disease appears to provide an excellent and predictable long-term result with a low incidence of late recurrence of ptosis.

Database: Medline

34. Real-Life ILUVIEN (Fluocinolone Acetonide) Case Study: Rapid Drying of the Macula and Improved Vision within 2 Years after Therapy Initiation.

Author(s): Quhill, Hibba; Quhill, Fahd

Source: Case reports in ophthalmology; 2016; vol. 7 (no. 3); p. 301-307

Publication Date: 2016

Publication Type(s): Journal Article

PubMedID: 28203186

Available in full text at [Case Reports in Ophthalmology](#) - from National Library of Medicine

Abstract: IMPORTANCEA case showing sustained structural and functional responses 2 years after a single treatment with ILUVIEN (0.2 µg/day fluocinolone acetonide, FAc) despite suboptimal responses to ranibizumab. OBSERVATIONS A 68-year-old female patient with diabetic macular oedema (DME) from type 2 diabetes mellitus was first diagnosed in October 2010 and had a baseline visual acuity (VA) of 46 Early Treatment Diabetic Retinopathy Study (ETDRS) letters in the left eye. Central foveal thickness (CFT) was 712 microns. The patient was treated with 11 intravitreal injections of ranibizumab (5 in combination with a small-interfering RNA agent), and by March 2014,

VA and CFT were largely unchanged (55 ETDRS letters and 774 microns). The patient was treated with ILUVIEN as she had a pseudophakic lens and a clearly suboptimal response to the prior therapy with ranibizumab. An implant releasing FAc at a dosage of 0.2 µg/day was administered in March 2014, and the optical coherence tomography indicated that the macula was dry after 7 days (CFT was below 300 microns). This was sustained at 6, 12, and 24 months after the treatment. VA improved by 5 letters within 7 days and by 15 letters within 14 days, and this was maintained after 24 months. Throughout the duration of this study, the intraocular pressure was ≤22 mm Hg, and no glaucoma medication was administered. **CONCLUSIONS AND RELEVANCE** In real-life UK practice, this DME patient showed a suboptimal response to multiple intravitreal injections of ranibizumab. When subsequently treated with a single injection of ILUVIEN, there were large and rapid improvements in VA and CFT that were maintained for the following 2 years.

Database: Medline

35. Review on surgical management of ptosis and the use of phenylephrine: A national survey of British Oculoplastic Surgery Society (BOPSS) UK Consultants.

Author(s): Mota, Peter M; Norris, Jonathan H

Source: Orbit (Amsterdam, Netherlands); Dec 2016; vol. 35 (no. 6); p. 339-342

Publication Date: Dec 2016

Publication Type(s): Journal Article

PubMedID: 27599918

Abstract: We assess current practice using topical phenylephrine by British Oculoplastic Surgery Society (BOPSS) consultants in the surgical management of ptosis. All UK consultant BOPSS members were invited to participate in a web-based survey, consisting of 8 questions relating to the surgical management of adult primary involutional ptosis with normal levator function and the use of phenylephrine in the management of ptosis. 53 BOPSS consultants (43%) completed the survey, of which 76% perform anterior approach levator advancement as first-line surgery. Then, 40% of consultants routinely use phenylephrine unilaterally in the ptotic eye, with 90% using 2.5% as opposed to 10%. Also, 77% of consultants use topical phenylephrine to illustrate the predicted outcome of surgery for the patient's benefit and 65% modify their approach on the basis of the test. If phenylephrine raises the ptotic eyelid >2 mm, those using an anterior approach reduces to 13.6%, with majority using a posterior approach (86.4%). If phenylephrine induces no improvement, then 76% use an anterior approach. If phenylephrine induces a contralateral ptosis 79% of consultants will perform simultaneous bilateral surgery. A number of interesting trends were observed amongst BOPSS consultants in their surgical approach to ptosis based on the phenylephrine test. The majority of consultants will switch from anterior to posterior approach surgery when the phenylephrine test is strongly positive and will also perform bilateral surgery when a contralateral ptosis is induced with phenylephrine.

Database: Medline

36. Monitoring ocular hypertension, how much and how often? A cost-effectiveness perspective.

Author(s): Hernández, R; Burr, J M; Vale, L; Azuara-Blanco, A; Cook, J A; Banister, K; Tuulonen, A; Ryan, M; Surveillance of Ocular Hypertension Study group

Source: The British journal of ophthalmology; Sep 2016; vol. 100 (no. 9); p. 1263-1268

Publication Date: Sep 2016

Publication Type(s): Multicenter Study Journal Article

PubMedID: 26659710

Available in full text at [British Journal of Ophthalmology](#) - from Highwire Press

Abstract: OBJECTIVE To assess the efficiency of alternative monitoring services for people with ocular hypertension (OHT), a glaucoma risk factor. DESIGN Discrete event simulation model comparing five alternative care pathways: treatment at OHT diagnosis with minimal monitoring; biennial monitoring (primary and secondary care) with treatment if baseline predicted 5-year glaucoma risk is $\geq 6\%$; monitoring and treatment aligned to National Institute for Health and Care Excellence (NICE) glaucoma guidance (conservative and intensive). SETTING UK health services perspective. PARTICIPANTS Simulated cohort of 10 000 adults with OHT (mean intraocular pressure (IOP) 24.9 mm Hg (SD 2.4)). MAIN OUTCOME MEASURES Costs, glaucoma detected, quality-adjusted life years (QALYs). RESULTS Treating at diagnosis was the least costly and least effective in avoiding glaucoma and progression. Intensive monitoring following NICE guidance was the most costly and effective. However, considering a wider cost-utility perspective, biennial monitoring was less costly and provided more QALYs than NICE pathways, but was unlikely to be cost-effective compared with treating at diagnosis (£86 717 per additional QALY gained). The findings were robust to risk thresholds for initiating monitoring but were sensitive to treatment threshold, National Health Service costs and treatment adherence. CONCLUSIONS For confirmed OHT, glaucoma monitoring more frequently than every 2 years is unlikely to be efficient. Primary treatment and minimal monitoring (assessing treatment responsiveness (IOP)) could be considered; however, further data to refine glaucoma risk prediction models and value patient preferences for treatment are needed. Consideration to innovative and affordable service redesign focused on treatment responsiveness rather than more glaucoma testing is recommended.

Database: Medline

37. Paediatric Eye Services: How Much of the Workload Is Amblyopia-Related?

Author(s): Stewart, Catherine E; Shah, Shaheen; Wren, Siobhan; Roberts, Clare J

Source: Strabismus; Sep 2016; vol. 24 (no. 3); p. 109-112

Publication Date: Sep 2016

Publication Type(s): Journal Article

PubMedID: 27485937

Abstract: AIMS The proportion of patients seen by the paediatric eye service that attend for reasons related to amblyopia has not been quantified. The purpose of this study was to quantify the proportion of patients seen in the paediatric eye service attending for reasons related to amblyopia. METHODS Records of all eye appointments of children attending the Hillingdon Hospitals NHS Foundation Trust and St Mary's Hospital Imperial College Healthcare NHS Trust over one month in 2009 were examined to determine the diagnosis and reason for attendance. RESULTS Seven hundred and four patients had appointments booked at St Mary's and Hillingdon in March 2009. The fail-to-attend rates were not significantly different at the 2 sites (19% at St Mary's and 9% at Hillingdon; $P=0.75$). Of the 704 patients, 533 (St Mary's, 252 [75%]; Hillingdon, 281 [76%]) were attending for amblyopia-related reasons. Of the overall 982 booked appointments, 770 (79%) were amblyopia-related. CONCLUSIONS Amblyopia diagnosis and management is clearly the most common cause of attendance to the paediatric eye service, accounting for over three-quarters of outpatient visits.

Database: Medline

38. Systematic literature review of treatments for management of complications of ischemic central retinal vein occlusion.

Author(s): Bradshaw, Steven E; Gala, Smeet; Nanavaty, Merena; Shah, Anshul; Mwamburi, Mkaya; Kefalas, Panos

Source: BMC ophthalmology; Jul 2016; vol. 16 ; p. 104

Publication Date: Jul 2016

Publication Type(s): Journal Article Review

PubMedID: 27401800

Available in full text at [BMC Ophthalmology](#) - from National Library of Medicine

Available in full text at [BMC Ophthalmology](#) - from ProQuest

Available in full text at [BMC Ophthalmology](#) - from BioMed Central

Abstract: BACKGROUND To understand the clinical and economic outcomes of treatments for managing complications of ischemic central retinal vein occlusion (iCRVO). METHODS We conducted a systematic literature review by searching multiple databases and ophthalmology conferences from 2004 to 2015. Studies published in English language and populations of age ≥ 45 years were included. For clinical endpoints, we defined eligibility criteria as randomized controlled trials, prospective before-and-after study designs, and non-randomized studies reporting on treatments in patients with iCRVO. For economic endpoints, all types of study design except cost-of-illness studies were included. We evaluated the definitions of ischemia, clinical and economic endpoints, and rate of development of complications. Risk of bias was assessed for clinical studies using the Cochrane risk-of-bias tool. RESULTS A total of 20 studies (1338 patients) were included. Treatments included anti-vascular endothelial growth factors (anti-VEGFs), steroids, and procedures primarily targeting macular edema and neovascularization. Ischemia was not defined consistently in the included studies. The level of evidence was mostly low. Most treatments did not improve visual acuity significantly. Development of treatment complications ranged from 11 to 57 %. Incremental cost-effectiveness ratios reported for anti-VEGFs and steroids were below the accepted threshold of GB£30,000, but considering such treatments only ameliorate disease symptoms they seem relatively expensive. CONCLUSIONS There is a lack of evidence for any intervention being effective in iCRVO, especially in the prevention of neovascularisation. iCRVO poses a significant clinical and economic burden. There is a need to standardize the definition of ischemia, and for innovative treatments which can significantly improve visual outcomes and prevent neovascular complications.

Database: Medline

39. Cost-Effectiveness of Ranibizumab Versus Aflibercept for Macular Edema Secondary to Branch Retinal Vein Occlusion: A UK Healthcare Perspective.

Author(s): Adedokun, Lola; Burke, Colin

Source: Advances in therapy; Jan 2016; vol. 33 (no. 1); p. 116-128

Publication Date: Jan 2016

Publication Type(s): Research Support, Non-u.s. Gov't Journal Article

PubMedID: 26747252

Available in full text at [Advances in therapy \[Adv Ther\]](#) NLMUID: 8611864 - from EBSCOhost

Abstract: INTRODUCTION Ranibizumab and aflibercept are anti-vascular endothelial growth factor agents licensed for the treatment of visual impairment due to macular edema secondary to branch retinal vein occlusion (BRVO). The aim of this study was to estimate, from a UK healthcare payer's perspective, the cost-effectiveness of ranibizumab versus aflibercept in this indication. METHODS A Markov model was used to simulate the outcomes and costs of treating BRVO. Patient baseline characteristics and efficacy data for ranibizumab were obtained from the BRAVO trial. The relative efficacy of aflibercept was derived from a published network meta-analysis. Injection frequencies were derived from ranibizumab and aflibercept studies included in the network meta-analysis. Health states were defined by increments of 10 letters in best corrected visual acuity (BCVA). Patients could gain or lose a maximum of two health states between cycles. The first cycle was 6 months, followed by monthly cycles. Different utility values were assigned to the better-seeing and worse-seeing eyes based on BCVA. A 2-year treatment time frame and a lifetime time horizon were used. Future costs and health outcomes were discounted at 3.5% per annum. Sensitivity analyses were used to test the robustness of the model. RESULTS The lifetime cost per patient treated was £15,273 with ranibizumab and £17,347 with aflibercept. Ranibizumab was dominant over aflibercept, producing incremental health gains of 0.0120 quality-adjusted life-years (QALYs) and cost savings of £2074. Net monetary benefit for ranibizumab at a willingness-to-pay threshold of £20,000/QALY was £2314. Sensitivity analyses showed that the results were robust to variations in model parameters. CONCLUSIONS Ranibizumab provides greater health gains at a lower overall cost than aflibercept in the treatment of visual impairment due to macular edema secondary to BRVO. Ranibizumab is therefore cost-effective from a UK healthcare payer's perspective. FUNDING Novartis Pharma AG, Basel, Switzerland.

Database: Medline

GENERAL

40. Electronic Referrals and Digital Imaging Systems in Ophthalmology: A Global Perspective.

Author(s): Jeganathan, V Swetha E; Hall, H Nikki; Sanders, Roshini

Source: Asia-Pacific journal of ophthalmology (Philadelphia, Pa.); 2017; vol. 6 (no. 1); p. 3-7

Publication Date: 2017

Publication Type(s): Journal Article

PubMedID: 28161930

Abstract: Ophthalmology departments face intensifying pressure to expedite sight-saving treatments and reduce the global burden of disease. The use of electronic communication systems, digital imaging, and redesigned service care models is imperative for addressing such demands. The recently developed Scottish Eyecare Integration Project involves an electronic referral system from community optometry to the hospital ophthalmology department using National Health Service (NHS) email with digital ophthalmic images attached, via a virtual private network connection. The benefits over the previous system include reduced waiting times, improved triage, e-diagnosis in 20% without the need for hospital attendance, and rapid electronic feedback to referrers. We draw on the experience of the Scottish Eyecare Integration Project and discuss the global applications of this and other advances in teleophthalmology. We focus particularly on the implications for management and screening of chronic disease, such as glaucoma and diabetic eye disease, and

ophthalmic disease, such as retinopathy of prematurity where diagnosis is almost entirely and critically dependent on fundus appearance. Currently in Scotland, approximately 75% of all referrals are electronic from community to hospital. The Scottish Eyecare Integration Project is globally the first of its kind and unique in a national health service. Such speedy, safe, and efficient models of communication are geographically sensitive to service provision, especially in remote and rural regions. Along with advances in teleophthalmology, such systems promote the earlier detection of sight-threatening disease and safe follow-up of non-sight-threatening disease in the community.

Database: Medline

41. Comparison of Clinical Trial and Systematic Review Outcomes for the 4 Most Prevalent Eye Diseases.

Author(s): Saldanha, Ian J; Lindsley, Kristina; Do, Diana V; Chuck, Roy S; Meyerle, Catherine; Jones, Leslie S; Coleman, Anne L; Jampel, Henry D; Dickersin, Kay; Virgili, Gianni

Source: JAMA ophthalmology; Aug 2017

Publication Date: Aug 2017

Publication Type(s): Journal Article

PubMedID: 28772305

Abstract: Importance Suboptimal overlap in outcomes reported in clinical trials and systematic reviews compromises efforts to compare and summarize results across these studies. Objectives To examine the most frequent outcomes used in trials and reviews of the 4 most prevalent eye diseases (age-related macular degeneration [AMD], cataract, diabetic retinopathy [DR], and glaucoma) and the overlap between outcomes in the reviews and the trials included in the reviews. Design, Setting, and Participants This cross-sectional study examined all Cochrane reviews that addressed AMD, cataract, DR, and glaucoma; were published as of July 20, 2016; and included at least 1 trial and the trials included in the reviews. For each disease, a pair of clinical experts independently classified all outcomes and resolved discrepancies. Outcomes (outcome domains) were then compared separately for each disease. Main Outcomes and Measures Proportion of review outcomes also reported in trials and vice versa. Results This study included 56 reviews that comprised 414 trials. Although the median number of outcomes per trial and per review was the same ($n = 5$) for each disease, the trials included a greater number of outcomes overall than did the reviews, ranging from 2.9 times greater (89 vs 30 outcomes for glaucoma) to 4.9 times greater (107 vs 22 outcomes for AMD). Most review outcomes, ranging from 14 of 19 outcomes (73.7%) (for DR) to 27 of 29 outcomes (93.1%) (for cataract), were also reported in the trials. For trial outcomes, however, the proportion also named in reviews was low, ranging from 19 of 107 outcomes (17.8%) (for AMD) to 24 of 89 outcomes (27.0%) (for glaucoma). Only 1 outcome (visual acuity) was consistently reported in greater than half the trials and greater than half the reviews. Conclusions and Relevance Although most review outcomes were reported in the trials, most trial outcomes were not reported in the reviews. The current analysis focused on outcome domains, which might underestimate the problem of inconsistent outcomes. Other important elements of an outcome (ie, specific measurement, specific metric, method of aggregation, and time points) might have differed even though the domains overlapped. Inconsistency in trial outcomes may impede research synthesis and indicates the need for disease-specific core outcome sets in ophthalmology.

Database: Medline

42. Optical coherence tomography angiography: A comprehensive review of current methods and clinical applications.

Author(s): Kashani, Amir H; Chen, Chieh-Li; Gahm, Jin K; Zheng, Fang; Richter, Grace M; Rosenfeld, Philip J; Shi, Yonggang; Wang, Ruikang K

Source: Progress in retinal and eye research; Jul 2017

Publication Date: Jul 2017

Publication Type(s): Journal Article Review

PubMedID: 28760677

Abstract: OCT has revolutionized the practice of ophthalmology over the past 10-20 years. Advances in OCT technology have allowed for the creation of novel OCT-based methods. OCT-Angiography (OCTA) is one such method that has rapidly gained clinical acceptance since it was approved by the FDA in late 2016. OCTA images are based on the variable backscattering of light from the vascular and neurosensory tissue in the retina. Since the intensity and phase of backscattered light from retinal tissue varies based on the intrinsic movement of the tissue (e.g. red blood cells are moving, but neurosensory tissue is static), OCTA images are essentially motion-contrast images. This motion-contrast imaging provides reliable, high resolution, and non-invasive images of the retinal vasculature in an efficient manner. In many cases, these images are approaching histology level resolution. This unprecedented resolution coupled with the simple, fast and non-invasive imaging platform have allowed a host of basic and clinical research applications. OCTA demonstrates many important clinical findings including areas of macular telangiectasia, impaired perfusion, microaneurysms, capillary remodeling, some types of intraretinal fluid, and neovascularization among many others. More importantly, OCTA provides depth-resolved information that has never before been available. Correspondingly, OCTA has been used to evaluate a spectrum of retinal vascular diseases including diabetic retinopathy (DR), retinal venous occlusion (RVO), uveitis, retinal arterial occlusion, and age-related macular degeneration among others. In this review, we will discuss the methods used to create OCTA images, the practical applications of OCTA in light of invasive dye-imaging studies (e.g. fluorescein angiography) and review clinical studies demonstrating the utility of OCTA for research and clinical practice.

Database: Medline

43. Fluorescence lifetime imaging ophthalmoscopy.

Author(s): Dysli, Chantal; Wolf, Sebastian; Berezin, Mikhail Y; Sauer, Lydia; Hammer, Martin; Zinkernagel, Martin S

Source: Progress in retinal and eye research; Jun 2017

Publication Date: Jun 2017

Publication Type(s): Journal Article Review

PubMedID: 28673870

Abstract: Imaging techniques based on retinal autofluorescence have found broad applications in ophthalmology because they are extremely sensitive and noninvasive. Conventional fundus autofluorescence imaging measures fluorescence intensity of endogenous retinal fluorophores. It mainly derives its signal from lipofuscin at the level of the retinal pigment epithelium. Fundus autofluorescence, however, can not only be characterized by the spatial distribution of the fluorescence intensity or emission spectrum, but also by a characteristic fluorescence lifetime function. The fluorescence lifetime is the average amount of time a fluorophore remains in the

excited state following excitation. Fluorescence lifetime imaging ophthalmoscopy (FLIO) is an emerging imaging modality for in vivo measurement of lifetimes of endogenous retinal fluorophores. Recent reports in this field have contributed to our understanding of the pathophysiology of various macular and retinal diseases. Within this review, the basic concept of fluorescence lifetime imaging is provided. It includes technical background information and correlation with in vitro measurements of individual retinal metabolites. In a second part, clinical applications of fluorescence lifetime imaging and fluorescence lifetime features of selected retinal diseases such as Stargardt disease, age-related macular degeneration, choroideremia, central serous chorioretinopathy, macular holes, diabetic retinopathy, and retinal artery occlusion are discussed. Potential areas of use for fluorescence lifetime imaging ophthalmoscopy will be outlined at the end of this review.

Database: Medline

44. The application of optical coherence tomography angiography in retinal diseases.

Author(s): Sambhav, Kumar; Grover, Sandeep; Chalam, Kakarla V

Source: Survey of ophthalmology; Jun 2017

Publication Date: Jun 2017

Publication Type(s): Journal Article

PubMedID: 28579550

Abstract: Optical coherence tomography angiography (OCTA) is a new, noninvasive imaging technique that generates real-time volumetric data on chorioretinal vasculature and its flow pattern. With the advent of high-speed optical coherence tomography, established enface chorioretinal segmentation, and efficient algorithms, OCTA generates images that resemble an angiogram. The principle of OCTA involves determining the change in backscattering between consecutive B-scans and then attributing the differences to the flow of erythrocytes through retinal blood vessels. OCTA has shown promise in the evaluation of common ophthalmologic diseases such as diabetic retinopathy, age-related macular degeneration, and retinal vascular occlusions. It quantifies vascular compromise reflecting the severity of diabetic retinopathy. OCTA detects the presence of choroidal neovascularization in exudative age-related macular degeneration and maps loss of choriocapillaris in nonexudative age-related macular degeneration. We describe principles of OCTA and findings in common and some uncommon retinal pathologies. Finally, we summarize its potential future applications. Its current limitations include a relatively small field of view, inability to show leakage, and a tendency for image artifacts. Further larger studies will define OCTAs utility in clinical settings and establish if the technology may offer its utility in decreasing morbidity through early detection and guide therapeutic interventions in retinal diseases.

Database: Medline

45. Surveillance of sight loss due to delay in ophthalmic treatment or review: frequency, cause and outcome.

Author(s): Foot, B; MacEwen, C

Source: Eye (London, England); May 2017; vol. 31 (no. 5); p. 771-775

Publication Date: May 2017

Publication Type(s): Journal Article

PubMedID: 28128796

Abstract: Purpose To determine the frequency of patients suffering harm due to delay in ophthalmic care in the UK over a 12-month period. Methods Patients with deterioration in vision in at least one eye of 3 lines of Snellen acuity or 15 letters on ETDRS chart or deterioration in visual field deviation of 3 decibels due to health service initiated delay in review or care were ascertained through the BOSU using prospective active surveillance involving all UK consultant ophthalmologists. Demographic details, diagnosis, cause and length of delay, and vision loss were then sought by questionnaire. Results 238 cases reported between March 2015 and February 2016. 197/238 questionnaires were returned (83%). Twenty-eight reports were out of the study period or did not meet the case definition. Median age was 76 years (range: 1 to 98 years). Median delay was 22 weeks (range: 2 days to 5½ years). Seventy two per cent experienced permanent reduction in visual acuity, 23% permanent deterioration in visual field. Main diagnoses were Glaucoma 42%, Age-related Macular Degeneration (AMD) 23%, and Diabetic Retinopathy (DR) 16%. Eighteen patients were eligible for Severely Sight Impaired (SSI) or Sight Impaired (SI) registration. Main causes were delayed follow-up (76%), lost referral (7%), and delayed treatment (8%). Conclusion Patients are suffering preventable harm due to health service initiated delay leading to permanently reduced vision. This is occurring in patients of all ages, but most consistently in those with chronic conditions. Delayed follow-up or review is the cause in the majority of cases indicating a lack of capacity within the hospital eye service.

Database: Medline

46. Inter-relationship of Soft Contact Lens Diameter, Base Curve Radius, and Fit.

Author(s): Young, Graeme; Hall, Lee; Sulley, Anna; Osborn-Lorenz, Kathrine; Wolffsohn, James S

Source: Optometry and vision science : official publication of the American Academy of Optometry; Apr 2017; vol. 94 (no. 4); p. 458-465

Publication Date: Apr 2017

Publication Type(s): Journal Article

PubMedID: 28099240

Abstract: PURPOSE To evaluate the inter-relationship of soft contact lens base curve radius (BC), diameter, and lens fit using a mathematical model. METHODS A spreadsheet mathematical model was used to evaluate theoretical fitting characteristics for various combinations of soft lens BC and diameter. The designs were evaluated using ocular topography data collected from 163 UK subjects. The model evaluated lens tightness (edge strain) and on-eye diameter (horizontal corneal overlap) and assumed that acceptable values fell within the range 0 to 6% and 0.2 to 1.2 mm, respectively. Analyses were undertaken of various trends relating to soft lens fit, including (1) the effect of BC and diameter on fitting success; (2) the effect of lens asphericity, BC, and sag on lens diameter on the eye; and (3) the effect of lens diameter on lens tightness. RESULTS The highest overall success rate (90.2%) was achieved with an 8.60/14.2 mm (BC/diameter) design. Using this design on the sample population, the median edge strain value was 3.2% (IQR: 2.1%) whereas median corneal overlap was 0.62 mm (IQR: 0.35). There was a positive correlation ($r = 0.37$, $P < .0001$) between edge strain and corneal overlap. Edge strain showed significant correlations with each of the ocular topography variables, most notably corneal asphericity ($r = -0.62$, $P < .0001$). Corneal overlap showed significant correlations with corneal asphericity ($r = -0.42$, $P < .0001$) and corneal diameter ($r = 0.92$, $P < .0001$). For a 0.4 mm change in BC, it is necessary to change diameter by 0.2 mm to maintain similar on-eye diameter (arclength). When changing lens diameter, a change in BC of 0.2 mm is required to maintain similar tightness of fit. CONCLUSIONS Mathematical modeling is a useful technique for

large-scale evaluation of the interactions of soft contact lens design and fit. The study has given useful insights into the general performance of soft lens designs.

47. Visual Function, Social Position, and Health and Life Chances: The UK Biobank Study.

Author(s): Cumberland, Phillippa M; Rahi, Jugnoo S; UK Biobank Eye and Vision Consortium

Source: JAMA ophthalmology; Sep 2016; vol. 134 (no. 9); p. 959-966

Publication Date: Sep 2016

Publication Type(s): Multicenter Study Journal Article

PubMedID: 27466983

Available in full text at [JAMA ophthalmology \[JAMA Ophthalmol\]](#) NLMUID: 101589539 - from EBSCOhost

Abstract: IMPORTANCE The adverse impact of visual impairment and blindness and correlations with socioeconomic position are known. Understanding of the effect of the substantially more common near-normal vision (mild impairment) and associations with social position as well as health and life chances is limited. OBJECTIVE To investigate the association of visual health (across the full acuity spectrum) with social determinants of general health and the association between visual health and health and social outcomes. DESIGN, SETTING, AND PARTICIPANTS A cross-sectional epidemiologic study was conducted using UK Biobank data from 6 regional centers in England and Wales. A total of 112 314 volunteers (aged 40-73 years) were assessed in June 2009 and July 2010. Data analysis was performed from May 20, 2013, to November 19, 2014. MAIN OUTCOMES AND MEASURES Habitual (correction if prescribed) distance visual acuity was used to assign participants to 1 of 8 categories from bilateral normal visual acuity (logMAR, 0.2 or better; Snellen equivalent, 6/9.5 or better) to visual impairment or blindness (logMAR, 0.5 or worse; Snellen equivalent, 6/19 or worse) using World Health Organization and International Statistical Classification of Diseases and Related Health Problems, Tenth Revision taxonomy. Relationships between vision, key social determinants and health and social outcomes (including the main factors that define an individual's life—the social, economic, educational, and employment opportunities and outcomes experienced by individuals during their life course) were examined using multivariable regression. RESULTS Of the 112 314 participants, 61 169 were female (54.5%); mean (SD) age was 56.8 (8.1) years. A total of 759 (0.7%) of the participants had visual impairment or blindness, and an additional 25 678 (22.9%) had reduced vision in 1 or both eyes. Key markers of social position were independently associated with vision in a gradient across acuity categories; in a gradient of increasing severity, all-cause impaired visual function was associated with adverse social outcomes and impaired general and mental health. These factors, including having no educational qualifications (risk ratio [RR], 1.86 [95% CI, 1.69-2.04]), having a higher deprivation score (RR, 1.08 [95% CI, 1.07-1.09]), and being in a minority ethnic group (eg, Asian) (RR, 2.05 [95% CI, 1.83-2.30]), were independently associated with being in the midrange vision category (at legal threshold for driving). This level of vision was associated with an increased risk of being unemployed (RR, 1.55 [95% CI, 1.31-1.84]), having a lower-status job (RR, 1.24 [95% CI, 1.09-1.41]), living alone (RR, 1.24 [95% CI, 1.10-1.39]), and having mental health problems (RR, 1.12 [95% CI, 1.04-1.20]). CONCLUSIONS AND RELEVANCE Impaired vision in adults is common, and even near-normal vision, potentially unrecognized without assessment, has a tangible influence on quality of life. Because inequalities in visual health by social position mirror other health domains, inclusion of vision in generic initiatives addressing health inequalities could address the existing significant burden of underrecognized and/or latent visual disability. Longitudinal

investigations are needed to elucidate pathophysiologic pathways and target modifiable mechanisms.

Database: Medline

48. Effectiveness of UK optometric enhanced eye care services: a realist review of the literature.

Author(s): Baker, Helen; Ratnarajan, Gokulan; Harper, Robert A; Edgar, David F; Lawrenson, John G

Source: Ophthalmic & physiological optics : the journal of the British College of Ophthalmic Opticians (Optometrists); Sep 2016; vol. 36 (no. 5); p. 545-557

Publication Date: Sep 2016

Publication Type(s): Journal Article Review

PubMedID: 27580754

Available in full text at [Ophthalmic and Physiological Optics](#) - from John Wiley and Sons

Abstract: PURPOSE UK demographic and legislative changes combined with increasing burdens on National Health Service manpower and budgets have led to extended roles for community optometrists providing locally-commissioned enhanced optometric services (EOS). This realist review's objectives were to develop programme theories that implicitly or explicitly explain quality outcomes for eye care provided by optometrists via EOS and to test these theories by investigating the effectiveness of services for cataract, glaucoma, and primary eye care. METHODS The review protocol was published on PROSPERO, and RAMESES publication standards were followed. Programme theories were formulated via scoping literature searches and expert consultation. The searching process involved all relevant electronic databases and grey literature, without restrictions on study design. Data synthesis focussed on questioning the integrity of each theory by considering supportive and refuting evidence from the source literature. RESULTS Good evidence exists for cataract, glaucoma and primary eye care EOS that: with appropriate training, accredited optometrists manage patients commensurate with usual care standards; genuine partnerships can exist between community and hospital providers for cataract and glaucoma EOS; patient satisfaction with all three types of service is high; cost-effectiveness of services is unproven for cataract and primary eye care, while glaucoma EOS cost-effectiveness depends on service type; contextual factors may influence service success. CONCLUSIONS The EOS reviewed are clinically effective and provide patient satisfaction but limited data is available on cost-effectiveness.

Database: Medline

49. Effect of poverty on eye health and implications for nursing practice.

Author(s): Williamson, Swapna; Seewoodhary, Ramesh; Dampies, Lavona

Source: Nursing standard (Royal College of Nursing (Great Britain) : 1987); Aug 2016; vol. 30 (no. 50); p. 42-51

Publication Date: Aug 2016

Publication Type(s): Journal Article

PubMedID: 27507393

Abstract: Poverty is a global issue that affects the health and quality of life of millions of people. It predisposes people to many health conditions, including sight loss or blindness as a result of the immune system becoming compromised. Blindness is common in areas of the world where there is extreme poverty. In the UK, poverty has become a major social issue, contributing to many health

problems, including eye conditions. These eye conditions can result in sight loss if they are not managed effectively. Psychosocial care is an essential aspect of patient care, because poverty and sight loss are interrelated. Healthcare practitioners have a significant role in the management and prevention of blindness. Blindness caused by poverty is largely preventable, and health promotion is an important strategy in care management.

Database: Medline

NICE PUBLICATIONS

Nice Guidance and publications

(<https://www.nice.org.uk/guidance/conditions-and-diseases/eye-conditions>)

NICE has developed a medtech innovation briefing (MIB) on [Boston Keratoprosthesis Type I for corneal blindness](#). January 17

[Adalimumab and dexamethasone for treating non-infectious uveitis \(TA460\)](#) July 2017

[Trabecular stent bypass microsurgery for open-angle glaucoma \(IPG575\)](#) February 2017

[Miniature lens system implantation for advanced age-related macular degeneration\(IPG565\)](#)
September 2016

[Aflibercept for treating visual impairment caused by macular oedema after branch retinal vein occlusion \(TA409\)](#) September 2016

[Aflibercept for treating visual impairment caused by macular oedema after branch retinal vein occlusion \(TA409\)](#) September 2016

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