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1. Title: A lack of vision: Evidence for poor communication of visual problems and support needs in education statements/plans for children with SEN
   Citation: Public Health, February 2015, vol./is. 129/2(143-148), 0033-3506;1476-5616 (01 Feb 2015)
   Author(s): Little J.-A., Saunders K.J.
   Language: English
   Abstract: Objective: Visual dysfunction is more common in children with neurological impairments and previous studies have recommended such children receive visual and refractive assessment. In the UK, children with neurological impairment often have educational statementing for Special Educational Needs (SEN) and the statement should detail all health care and support needs to ensure the child’s needs are met during school life. Study design: This study examined the representation of visual information in statements of SEN and compared this to orthoptic visual information from school visual assessments for children in a special school in Northern Ireland, UK. Methods: The parents of 115 school children in a special school were informed about the study via written information. Participation involved parents permitting the researchers to access their child’s SEN educational statement and orthoptic clinical records. Results: Statement information was accessed for 28 participants aged between four and 19 years; 25 contained visual information. Two participants were identified in their statements as having a certification of visual impairment. An additional 10 children had visual acuity >0.3logMAR. This visual deficit was not reported in statements in eight out of these 12 cases (67%). 11 participants had significant refractive error and wore spectacles, but only five (45%) had this requirement recorded in their statement. Overall, 10 participants (55%) had either reduced visual acuity or significant refractive error which was not recorded in their statement. Conclusions: Despite additional visual needs being common, and described in clinical records, the majority of those with reduced vision and/or spectacle requirements did not have this information included in their statement. If visual limitations are not recognized by educational services, the child’s needs may not be met during school life. More comprehensive eye care services, embedded with stakeholder communication and links to education are necessary to improve understanding of vision for children with neurological impairments.
   Publication type: Journal: Article
   Source: EMBASE

2. Title: A systematic review of the effectiveness of treatments in altering the natural history of intermittent exotropia
   Citation: British Journal of Ophthalmology, April 2015, vol./is. 99/4(440-450), 0007-1161;1468-2079 (01 Apr 2015)
   Author(s): Joyce K.E., Beyer F., Thomson R.G., Clarke M.P.
   Language: English
   Abstract: Evidence of effectiveness of interventions for treatment of childhood intermittent exotropia, X(T), is unclear. We conducted a systematic review to locate, appraise and synthesise evidence of effectiveness, including twelve electronic databases, supplemented with hand searches and expert contact. We included randomised controlled trials, quasi-experimental and cohort studies with a comparison group examining interventions for divergence excess, simulated divergence excess or basic type X (T) in children, up to and including 18 years of age, followed for at least 6 months. Dual data extraction and critical appraisal were conducted and a narrative synthesis undertaken. Eleven studies satisfied the eligibility criteria. Seven examined the comparative effectiveness of two
surgical procedures; four compared surgery with other interventions, including botulinum toxin A therapy, orthoptic exercises, occlusion, binocular vision training and watchful waiting. The evidence retrieved was of limited extent and quality with differences across studies in terms of outcome assessment and most appropriate time-point for measuring long-term outcomes. There were mixed outcomes when comparing unilateral recession/resection (R&R) with bilateral lateral rectus recession (BLR) on improving angle of deviation, which makes it difficult to recommend either surgical option with confidence. While non-surgical interventions appear less effective in terms of improving angle of deviation, they are rarely associated with adverse outcomes. Given the limited evidence base, better designed studies are required to address the question of the most effective management for treatment of childhood X(T). Importantly, consensus is required on what constitutes a successful outcome as well as agreement on how this should be measured.

**Publication type:** Journal: Review

**Source:** EMBASE

**Full text:** Available *The British journal of ophthalmology* at British Journal of Ophthalmology

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### 3. Title: Aflibercept, bevacizumab, or ranibizumab for diabetic macular edema

**Citation:** New England Journal of Medicine, March 2015, vol./is. 372/13(1193-1203), 0028-4793;1533-4406 (26 Mar 2015)


**Language:** English

**Abstract:** Background: The relative efficacy and safety of intravitreous aflibercept, bevacizumab, and ranibizumab in the treatment of diabetic macular edema are unknown. Methods: At 89 clinical sites, we randomly assigned 660 adults (mean age, 61+/-10 years) with diabetic macular edema involving the macular center to receive intravitreous aflibercept at a dose of 2.0 mg (224 participants), bevacizumab at a dose of 1.25 mg (218 participants), or ranibizumab at a dose of 0.3 mg (218 participants). The study drugs were administered as often as every 4 weeks, according to a protocol-specified algorithm. The primary outcome was the mean change in visual acuity at 1 year. Results: From baseline to 1 year, the mean visual acuity letter score (range, 0 to 100, with higher scores indicating better visual acuity; a score of 85 is approximately 20/20) improved by 13.3 with aflibercept, by 9.7 with bevacizumab, and by 11.2 with ranibizumab. Although the improvement was greater with aflibercept than with the other two drugs (P<0.001 for aflibercept vs. bevacizumab and P = 0.03 for aflibercept vs. ranibizumab), it was not clinically meaningful, because the difference was driven by the eyes with worse visual acuity at baseline (P<0.001 for interaction). When the initial visual-acuity letter score was 78 to 69 (equivalent to approximately 20/32 to 20/40) (51% of participants), the mean improvement was 8.0 with aflibercept, 7.5 with bevacizumab, and 8.3 with ranibizumab (P>0.50 for each pairwise comparison). When the initial letter score was less than 69 (approximately 20/50 or worse), the mean improvement was 18.9 with aflibercept, 11.8 with bevacizumab, and 14.2 with ranibizumab (P<0.001 for aflibercept vs. bevacizumab, P = 0.003 for aflibercept vs. ranibizumab, and P = 0.21 for ranibizumab vs. bevacizumab). There were no significant differences among the study groups in the rates of serious adverse events (P = 0.40), hospitalization (P = 0.51), death (P = 0.72), or major cardiovascular events (P = 0.56). Conclusions: Intravitreous aflibercept, bevacizumab, or ranibizumab improved vision in eyes with center-involved diabetic macular edema, but the relative effect depended on baseline visual acuity. When the initial visual-acuity loss was mild, there were no apparent differences, on average, among study groups. At worse levels of initial visual acuity, aflibercept was more effective at improving vision.

**Publication type:** Journal: Article

**Source:** EMBASE

**Full text:** Available *The New England journal of medicine* at New England Journal of Medicine

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### 4. Title: Ageing of the vitreous: From acute onset floaters and flashes to retinal detachment

**Citation:** Ageing Research Reviews, May 2015, vol./is. 21/(71-77), 1568-1637;1872-9649 (May 01, 2015)

**Author(s):** Lumi X., Hawlina M., Glavac D., Facsko A., Moe M.C., Kaarniranta K., Petrovski G.

**Language:** English

**Abstract:** Floaters and flashes are most commonly symptoms of age-related degenerative changes in the vitreous body and posterior vitreous detachment. The etiology and pathogenesis of floaters’ formation is still not well understood. Patients with acute-onset floaters, flashes and defects in their visual field, represent a medical emergency with the need for same day referral to an ophthalmologist. Indirect ophthalmoscopy with scleral indentation is needed in order to find possible retinal break(s), on-time treatment and prevention of retinal detachment. The molecular and genetic pathogenesis, as well as the epidemiology of the ageing changes of the vitreous is summarized here, with view on the several treatment modalities in relation to their success rate and side-
5. Title: Association between glaucoma and obstructive sleep apnea syndrome: A meta-analysis and systematic review

Citation: PLoS ONE, February 2015, vol./is. 10/2, 1932-6203 (23 Feb 2015)

Author(s): Shi Y., Liu P., Guan J., Lu Y., Su K.

Language: English

Abstract: Background: Obstructive sleep apnea syndrome (OSAS) is a common disease that increases the risk of diabetes, heart disease, and stroke. However, studies of an association between OSAS and glaucoma neuropathy have reported controversial findings. Objective: The main purpose of this study was to evaluate whether a significant association exists between OSAS and glaucoma by performing a meta-analysis of previous studies. Methods: A comprehensive literature search using the PubMed and Embase databases was performed to identify cross-sectional, case-control, and cohort studies related to the topic. We estimated a pooled odds ratio (OR) for the association between OSAS and glaucoma, by a fixed- or random-effects model. Results: In total, 16 studies with 2,278,832 participants met the inclusion criteria: one retrospective cohort study reported an adjusted hazard ratio of glaucoma of 1.67 (95% CI = 1.30-2.17). Using a fixed-effects model, the pooled OR of six case-control studies was 1.96 (95% CI = 1.37-2.80). A significant association was also identified in a meta-analysis of nine cross-sectional studies using a random-effects model, which showed a pooled OR of 1.41 (95% CI = 1.11-1.79). However, the reported pooled estimates for case control studies and cross-sectional studies were based on unadjusted ORs. Conclusions: Our results suggest that OSAS is associated with the prevalence of glaucoma. However, this result was based only on unadjusted estimates. Prospective cohort studies designed to take into consideration potential confounders, or examination of data from interventional trials to determine whether a reduction in OSAS status is associated with a reduced incidence of glaucoma, are needed to clarify whether OSAS is an independent risk factor for glaucoma.

6. Title: Choroidal effusions after glaucoma surgery

Citation: Current opinion in ophthalmology, March 2015, vol./is. 26/2(134-142), 1531-7021 (01 Mar 2015)

Author(s): Schrieber C., Liu Y.

Language: English

Abstract: RECENT FINDINGS: Trabeculectomy remains one of the most effective and widely used glaucoma surgeries, but it is also associated with a significant rate of complications, including serous choroidal effusion and suprachoroidal hemorrhage. Alternative surgical techniques for glaucoma management are increasingly utilized due in part to their lower rate of associated complications. Prevention measures for serous choroidal effusion and suprachoroidal hemorrhage include the recognition of patient risk factors and careful selection of glaucoma surgical technique. Management options include observation, medications, office-based procedures, and surgical interventions directed at maximizing patient outcomes. SUMMARY: Familiarity with reported rates of postoperative choroidal effusions, patient risk factors, and management strategies will aid in reducing the frequency of these complications and in improving patient care. PURPOSE OF REVIEW: A diverse range of surgical approaches are now used for glaucoma management. This review compares the reported rates of serous choroidal effusion and suprachoroidal hemorrhage after various glaucoma surgical procedures. As these complications can be visually devastating, we summarize the current literature on prevention strategies and management.

7. Title: Clinical update in optic nerve disorders

Citation: Expert Review of Ophthalmology, April 2015, vol./is. 10/2(145-166), 1746-9899;1746-9902 (01 Apr 2015)

Author(s): Agarwal N., Hanumunthadu D., Afrasiabi M., Malaguarnera G., Cordeiro M.F.

Language: English

Abstract: Optic nerve disorders lead to visual loss and can result: from multiple etiologies, including optic neuritis, anterior ischemic optic neuropathy, glaucoma, Leber’s hereditary optic neuropathy and dominant optic atrophy. The recent advances in imaging technologies often supplement the history and clinical examination for identification of optic neuropathies. Correlation between the structural and functional changes in eye is important to validate these
diagnostic techniques. Advancement in the understanding of disease process has led to the development of new potential therapeutic targets that may enable apt management of these conditions. Animal models play a crucial role in understanding the pathophysiology of these disorders, identifying therapeutic targets and testing prospective drugs, which are vital for providing better patient care. In this review, the authors aim to provide a clinical update to the readers about these optic neuropathies in addition to the essential role played by animal research in progressing their current state of knowledge.

**Publication type:** Journal: Review  
**Source:** EMBASE

### 8. Title: Comparative Effectiveness of Intravitreal Bevacizumab With or Without Triamcinolone Acetonide for Treatment of Diabetic Macular Edema

**Citation:** Annals of Pharmacotherapy, April 2015, vol./is. 49/4(387-397), 1060-0280;1542-6270 (16 Apr 2015)  
**Author(s):** Jin E., Luo L., Bai Y., Zhao M.  
**Language:** English  
**Abstract:** Background: Bevacizumab and triamcinolone acetonide (TA) are both common choices for treatment of diabetic macular edema (DME), but the comparative efficacy of combined or separate applications is still not determined. Objectives: To compare the treatment efficacy of intravitreal bevacizumab (IVB) and the combination of IVB and intravitreal triamcinolone (IVT) for DME patients. Methods: PubMed, EMBASE, and the Cochrane library were systematically reviewed for randomized controlled trials comparing IVB with IVB/IVT. Data on visual acuity (VA) and central macular thickness (CMT) changes at 3 and 6 months were extracted and data on adverse events were collected. A meta-analysis was performed using the software RevMan 5.3. The methodological quality and bias risks were also evaluated. Results: VA improved more significantly in the IVB/IVT group compared with the IVB group at 3 months (mean difference [MD] = 0.07; 95% CI = 0.01 to 0.13), whereas there was no significant difference at 6 months (MD = -0.01; 95% CI = -0.11 to 0.09). The CMT reduction in the IVB/IVT group was significantly greater than that in the IVB group at 3 months (MD = 48.40; 95% CI = 30.23 to 66.57), but no statistically significant difference was found at 6 months (MD = 0.47; 95% CI = -24.11 to 25.04). Ocular hypertension was detected in 9/243 eyes in the IVB/IVT group but none of the IVB eyes. Conclusion: IVB/IVT is more effective for improving VA and decreasing CMT at 3 months in DME. A single injection of TA along with the first IVB could improve outcome within 3 months, but this is not sustained at 6 months. Continuous IVT/IVB treatment should be performed in further trials to clarify its long-term potential efficacy.  
**Publication type:** Journal: Article  
**Source:** EMBASE

### 9. Title: Comparison of Ahmed glaucoma valve implantation and trabeculectomy for glaucoma: A systematic review and meta-Analysis  
**Citation:** PLoS ONE, February 2015, vol./is. 10/2, 1932-6203 (26 Feb 2015)  
**Author(s):** HaiBo T., Xin K., ShiHeng L., Lin L.  
**Language:** English  
**Abstract:** Objective: To compare the efficacy and safety of Ahmed glaucoma valve implantation (AGV) with trabeculectomy in the management of glaucoma patients. Methods: A comprehensive literature search (PubMed, Embase, Google, and the Cochrane library) was performed, including a systematic review with meta-analysis of controlled clinical trials comparing AGV versus trabeculectomy. Efficacy estimates were the weighted mean differences (WMDs) for the percentage intraocular pressure reduction (IOPR %) from baseline to end-point, the reduction in glaucoma medications, and the odds ratios (ORs) for complete and qualified success rates. Safety estimates were the relative risks (RRs) for adverse events. All outcomes were reported with a 95% confidence interval (CI). Statistical analysis was performed using the RevMan 5.0 software. Results: Six controlled clinical trials were included in this meta-analysis. There was no significant difference between the AGV and trabeculectomy in the IOP% (WMD = -3.04, 95% CI: -8.36-2.26; P = 0.26). The pooled ORs comparing AGV with trabeculectomy were 0.46 (0.22, 0.99) for the complete success rate (P = 0.05) and 0.97 (0.78-1.20) for the quantified success rate (P = 0.76). No significant difference in the reduction in glaucoma medications was observed (WMD = 0.24; 95% CI: -0.27-0.76; P = 0.35). AGV was found to be associated with a significantly lower frequency of all adverse events (RR = 0.71; 95% CI: 1.14-0.97; p = 0.001) than trabeculectomy, while the most common complications did not differ significantly (all p > 0.05). Conclusion: AGV was equivalent to trabeculectomy in reducing the IOP, the number of glaucoma medications, success rates, and rates of the most common complications. However, AGV was associated with a significantly lower frequency of overall adverse events.  
**Publication type:** Journal: Review  
**Source:** EMBASE
10. **Title:** Congenital stationary night blindness: An analysis and update of genotype-phenotype correlations and pathogenic mechanisms  
**Citation:** Progress in Retinal and Eye Research, March 2015, vol./is. 45/(58-110), 1350-9462;1873-1635 (01 Mar 2015)  
**Author(s):** Zeitz C., Robson A.G., Audo I.  
**Language:** English  
**Abstract:** Congenital stationary night blindness (CSNB) refers to a group of genetically and clinically heterogeneous retinal disorders. Seventeen different genes with more than 360 different mutations and more than 670 affected alleles have been associated with CSNB, including genes coding for proteins of the phototransduction cascade, those important for signal transmission from the photoreceptors to the bipolar cells or genes involved in retinoid recycling in the retinal pigment epithelium. This article describes the phenotypic characteristics of different forms of CSNB that are necessary for accurate diagnosis and to direct and improve genetic testing. An overview of classical and recent methods used to identify specific CSNB genotypes is provided and a meta-analysis of all previously published and novel data is performed to determine the prevalence of disease-causing mutations. Studies of the underlying molecular pathogenic mechanisms based on cell culture techniques and animal studies are outlined. The article highlights how the study of CSNB has increased understanding of the mechanisms of visual signalling in the retina, likely to prove important in developing future treatments for CSNB and other retinal disorders.  
**Publication type:** Journal: Review  
**Source:** EMBASE

11. **Title:** Dynamics and function of the tear film in relation to the blink cycle  
**Citation:** Progress in Retinal and Eye Research, March 2015, vol./is. 45/(132-164), 1350-9462;1873-1635 (01 Mar 2015)  
**Author(s):** Braun R.J., King-Smith P.E., Begley C.G., Li L., Gewecke N.R.  
**Language:** English  
**Abstract:** Great strides have recently been made in quantitative measurements of tear film thickness and thinning, mathematical modeling thereof and linking these to sensory perception. This paper summarizes recent progress in these areas and reports on new results. The complete blink cycle is used as a framework that attempts to unify the results that are currently available. Understanding of tear film dynamics is aided by combining information from different imaging methods, including fluorescence, retroillumination and a new high-speed stroboscopic imaging system developed for studying the tear film during the blink cycle. During the downstroke of the blink, lipid is compressed as a thick layer just under the upper lid which is often released as a narrow thick band of lipid at the beginning of the upstroke. "Rippling" of the tear film/air interface due to motion of the tear film over the corneal surface, somewhat like the flow of water in a shallow stream over a rocky streambed, was observed during lid motion and treated theoretically here. New mathematical predictions of tear film osmolarity over the exposed ocular surface and in tear breakup are presented; the latter is closely linked to new in vivo observations. Models include the effects of evaporation, osmotic flow through the cornea and conjunctiva, quenching of fluorescence, tangential flow of aqueous tears and diffusion of tear solutes and fluorescein. These and other combinations of experiment and theory increase our understanding of the fluid dynamics of the tear film and its potential impact on the ocular surface.  
**Publication type:** Journal: Review  
**Source:** EMBASE

12. **Title:** Effects of intravitreal ranibizumab on retinal hard exudate in diabetic macular edema: Findings from the RIDE and RISE phase III clinical trials  
**Citation:** Ophthalmology, April 2015, vol./is. 122/4(779-786), 0161-6420;1549-4713 (01 Apr 2015)  
**Author(s):** Domalpally A., Ip M.S., Ehrlich J.S.  
**Language:** English  
**Abstract:** Purpose To evaluate the effect of monthly intravitreal ranibizumab on hard exudate (HE) area and the impact of HE on visual acuity (VA) outcomes in diabetic macular edema (DME) patients using data from 2 phase III clinical trials. Design Exploratory analyses of phase III, randomized, double-masked, sham-controlled, multicenter clinical trials. Participants Adults with DME, baseline best-corrected VA 20/40 to 20/320 Snellen equivalent, and central foveal thickness of >275 mum. Methods Between the 2 studies, 759 patients with DME were randomized to receive monthly 0.3 or 0.5 mg intravitreal ranibizumab (Lucentis; Genentech, Inc., South San Francisco, CA) or sham
injections. Main Outcome Measures Hard exudate area was assessed from color fundus stereophotographs both on an ordinal scale and using continuous estimates of areas within the Early Treatment Diabetic Retinopathy Study grid. Results Data from 739 eyes were available for analysis. Mean baseline HE area was similar across treatment groups, ranging from 0.65 to 0.82 mm$^2$. Through month 24, the percentage of eyes without HE increased from 20.9% to 36.3% in the sham group and from 22.1% to 61.3% and 23.6% to 62.0% in the ranibizumab 0.3-mg and 0.5-mg groups, respectively. Resolution of HE became apparent sometime after month 6 in ranibizumab-treated eyes. At baseline, there was no meaningful correlation between VA and presence or absence of HE. After baseline, there also was no consistent correlation between presence or absence of HE and change in VA over time. Conclusions In this exploratory analysis, monthly intravitreal ranibizumab resulted in significantly greater reduction of HE area compared with sham ($P < 0.0001$). In contrast to the rapid effects of ranibizumab on macular edema, changes in HE area were more gradual. Contrary to prior expectations, the presence and area of HE did not increase as DME resolved (either in the ranibizumab or sham groups). Importantly, baseline VA was not correlated with presence of HE, nor was the therapeutic benefit of ranibizumab on VA affected negatively by the presence of HE. These data suggest that in the context of intravitreal anti-vascular endothelial growth factor therapy, the presence of HE is not a prognostic indicator of poor visual outcomes.

**Publication type:** Journal: Article

**Source:** EMBASE

**Full text:** Available Ophthalmology at Salisbury District Hospital Healthcare Library

**Full text:** Available Ophthalmology at Ophthalmology

**13.** Title: Effects of RAS inhibitors on diabetic retinopathy: A systematic review and meta-analysis

**Citation:** The Lancet Diabetes and Endocrinology, April 2015, vol./is. 3/4(263-274), 2213-8587;2213-8595 (01 Apr 2015)


**Language:** English

**Abstract:** Background: Results of several studies have shown a possible beneficial effect of renin-angiotensin system (RAS) inhibitors on diabetic retinopathy, but the findings were contradictory. We did a systematic review and meta-analysis to assess the effect of RAS inhibitors on diabetic retinopathy. Methods: We identified relevant publications in PubMed, Embase, Cochrane Library Central Register of Controlled Trials, and abstracts from main annual meetings. Only randomised controlled trials comparing angiotensin-converting enzyme (ACE) inhibitor or angiotensin-receptor blocker (ARB) monotherapy with other antihypertensive drugs or placebo in type 1 or type 2 diabetes were eligible for inclusion in the analysis. The primary outcomes were progression and regression of diabetic retinopathy in all patients and several subgroups. Risk ratios (RRs) with corresponding 95% CIs were pooled. We also did a network meta-analysis to assess the effect of different antihypertensive drugs on diabetic retinopathy by ranking order. This study is registered with the International Prospective Register of Systematic Reviews (PROSPERO), number CRD42013004548. Findings: 21 randomised clinical trials with 13,823 participants were included in the meta-analysis. RAS inhibitors were associated with reduced risk of progression (absolute risk difference -3%, 95% CI -5 to 1; pooled RR 0.87, 95% CI 0.80-0.95; p=0.002) and increased possibility of regression of diabetic retinopathy (8%, 1.16; RR 139, 95% CI 119-161; p=0.000002). In normotensive patients, RAS inhibitors decreased risk of diabetic retinopathy progression (0.81, 0.69-0.94; p=0.0007) and increased possibility of regression (0.143, 0.114-0.179; p=0.0002). In hypertensive patients, RAS inhibitors were not associated with difference in risk of progression of diabetic retinopathy (0.93, 0.79-1.10; p=0.42) or possibility of diabetic retinopathy regression (2.21, 0.92-5.31; p=0.08). ACE inhibitors were associated with reduced risk of diabetic retinopathy progression (0.84, 0.75-0.94; p=0.002) and higher possibility of disease regression (1.5, 1.20-1.86; p=0.0003). ARBs were associated with a higher possibility of diabetic retinopathy regression (1.32, 1.07-1.61; p=0.0008), but had no effect on disease progression (0.92, 0.80-1.06; p=0.25). Network meta-analysis showed the association of antihypertensive drugs with risk of diabetic retinopathy progression was lowest for ACE inhibitors, followed by ARBs, beta blockers, calcium channel blockers, and placebo in rank order. The association of antihypertensive drugs with possibility of diabetic retinopathy regression was highest for ACE inhibitors, followed by ARBs, placebo, and calcium channel blockers in rank order. Interpretation: In patients with diabetes, RAS inhibitors reduce the risk of diabetic retinopathy, and increase the possibility of diabetic retinopathy regression. ACE inhibitors might be better than ARBs for treating diabetic retinopathy, and might exert the most beneficial effect on diabetic retinopathy of all widely used antihypertensive drug classes.

**Publication type:** Journal: Article

**Source:** EMBASE

**14.** Title: Evaluating glaucoma damage: Emerging imaging technologies
Expert Review of Ophthalmology, April 2015, vol./is. 10/2(183-195), 1746-9899;1746-9902 (01 Apr 2015)

Author(s): Kostanyan T., Wollstein G., Schuman J.S.

Language: English

Abstract: The use of ocular imaging tools to estimate structural and functional damage in glaucoma has become a common clinical practice and a substantial focus of vision research. The evolution of the imaging technologies through increased scanning speed, penetration depth, image registration and development of multimodal devices has the potential to detect the pathology more reliably and in earlier stages. This review is focused on new ocular imaging modalities used for glaucoma diagnosis.

Publication type: Journal: Review

Source: EMBASE

15. Title: Graft rejection rate and graft failure rate of penetrating keratoplasty (PKP) vs lamellar procedures: A systematic review

Citation: PLoS ONE, March 2015, vol./is. 10/3, 1932-6203 (17 Mar 2015)

Author(s): Akanda Z.Z., Naeem A., Russell E., Belrose J., Si F.F., Hodge W.G.

Language: English

Abstract: Purpose: The aim of our investigation was to conduct a quantitative meta-analysis of the present world literature comparing the major surgical outcomes of penetrating keratoplasty (PKP) to lamellar procedures. Our goal is that clinicians, eye bank administrators, and health policy makers will be able to utilize this study in implementing decisions in regards to corneal transplantation. Methods: Pooled measures of association were with odds ratios and because of study heterogeneity, the pooled effects were assumed to follow a random effects model (DerSimonian-Laird). The comparisons were between 1) PKP’s and all lamellar procedures (anterior AND posterior) and then 2) between PKP’s and all anterior lamellar procedures and 3) PKP and all posterior lamellar procedures. Results: For PKP vs anterior lamellar procedures, the pooled odds ratio for rejection of PKP over lamellar keratoplasty (LK) was 3.56 (95% CI: 1.76-7.20) and for outright failure, the pooled odds ratio of PKP failure vs LK was 2.85 (95% CI: 0.84-9.66). For posterior lamellar procedures, the pooled odds ratio for rejection of PKP over LK was 1.52 (95% CI: 1.00-2.32). The pooled odds ratio for outright failure of PKP over posterior lamellar procedures was 2.09 (95% CI: 0.57-7.59). The follow up time was significantly longer for full transplants than for lamellar procedures. Conclusions: For both anterior and posterior lamellar procedures, the odds ratios comparing rejection of full transplants to lamellar procedures (both anterior and posterior individually) were significantly higher in the PKP group. For outright failure, the PKP group also had a higher risk of failure than the lamellar groups but this was not statistically significant in either instance (anterior or posterior). Some of the clinical differences benefitting lamellar procedures may at least be partly explained by follow up time differences between groups and this needs to be accounted for more rigorously in future studies.

Publication type: Journal: Article

Source: EMBASE

Full text: Available ProQuest at PLoS ONE

Full text: Available ProQuest at PLoS One

16. Title: Impact of retinopathy of prematurity on ocular structures and visual functions

Citation: Archives of Disease in Childhood: Fetal and Neonatal Edition, March 2015, vol./is. 100/2(F179-F184), 1359-2998;1468-2052 (01 Mar 2015)

Author(s): Fielder A., Blencowe H., O'connor A., Gilbert C.

Language: English

Abstract: The preterm baby may develop ophthalmic sequelae which can be due to prematurity per se, due to retinopathy of prematurity (ROP) or due to neurological damage. Focusing on the former two, we discuss how in high-income countries the risk of sight-threatening ROP is largely confined to babies <1000 g birth weight (BW), whereas in low-income or middle-income countries babies exceeding 2500 g BW can be blinded. The effects of prematurity and ROP are presented as regional and global estimates of acute-phase ROP and the consequent mild/moderate and severe visual impairment. We discuss sequelae and how they affect the eye and its shape, strabismus and finally consider their impact on visual functions, including visual acuity, the visual field, colour vision and contrast sensitivity.

Publication type: Journal: Review

Source: EMBASE

Full text: Available Highwire Press at Salisbury District Hospital Healthcare Library

Full text: Available Highwire Press at Fetal and Neonatal
17. Title: Improvement in vision-related function with intravitreal aflibercept: Data from phase 3 studies in wet age-related macular degeneration

Citation: Ophthalmology, March 2015, vol./is. 122(3(571-578), 0161-6420;1549-4713 (01 Mar 2015)


Language: English

Abstract: To evaluate the effect of intravitreal aflibercept injection on visual function in wet age-related macular degeneration (AMD). Design Prospective, multicenter, double-masked, active-controlled, parallel-group, randomized phase 3 clinical studies [VEGF Trap-Eye: Investigation of Efficacy and Safety in Wet AMD [VIEW] 1 and 2 [clinicaltrials.gov identifiers, NCT00509795 and NCT00637377, respectively]). Participants Patients (n = 2419) with active, treatment-naïve, exudative AMD. This analysis included patients who received intravitreal aflibercept 2.0 mg every 8 weeks (2q8; n = 607) or ranibizumab 0.5 mg every 4 weeks (0.5q4; n = 595). Intervention Patients were randomized 1:1:1:1 to receive intravitreal aflibercept 2q8 (after 3 initial monthly doses), intravitreal aflibercept 2q4, intravitreal aflibercept 0.5q4, or ranibizumab 0.5q4 in the study eye. Patients in the intravitreal aflibercept 2q8 group received a sham injection alternating with active treatment. Main Outcome Measures The 25-item National Eye Institute Visual Function Questionnaire (NEI VFQ-25) was administered at baseline and at weeks 12, 24, 36, and 52. The NEI VFQ-25 subscale scores were compared between intravitreal aflibercept 2q8 and ranibizumab 0.5q4 treatment arms, the approved dosing for each agent worldwide. Change in composite NEI VFQ-25 score was evaluated based on categorical change in visual acuity (worsened, unchanged, improved). Results Baseline NEI VFQ-25 scores were similar for both treatments in both studies. Mean change from baseline to 52 weeks was similar for ranibizumab 0.5q4 and intravitreal aflibercept 2q8 across all 12 subscales, with the greatest improvements noted for mental health and general vision (9.0-11.6 points, both treatments, both studies). Improvement of 4 points or more (both treatments, both studies) also was observed for subscales near vision, distance vision, role difficulties, and dependency. Mean change from baseline to 52 weeks in NEI VFQ-25 composite score (pooled data) stratified by clinical response showed meaningful improvement only in patients who gained 5 Early Treatment Diabetic Retinopathy letters or more (7.3 and 7.8 points for intravitreal aflibercept 2q8 and ranibizumab 0.5q4, respectively). Conclusions Visual function outcomes were similar across all NEI VFQ-25 subscales over 52 weeks for intravitreal aflibercept 2q8 and ranibizumab 0.5q4, with clinically meaningful improvement recorded in 6 of 12 subscales.

Publication type: Journal: Article

Source: EMBASE

Full text: Available Ophthalmology at Salisbury District Hospital Healthcare Library

18. Title: Insulin use and risk of diabetic macular edema in diabetes mellitus: A systematic review and meta-analysis of observational studies

Citation: Medical Science Monitor, March 2015, vol./is. 21/(929-936), 1234-1010;1643-3750 (30 Mar 2015)

Author(s): Zhang J., Ma J., Zhou N., Zhang B., An J.

Language: English

Abstract: Background: Diabetes mellitus is a common and serious disorder. A search of the literature reveals no comprehensive quantitative assessment of the association between insulin use and incidence of diabetic macular edema. Therefore, we performed a meta-analysis of observational studies to evaluate the effect of insulin use on the risk of developing macular edema. Material/Methods: Comparative studies published until May 2014 were searched through a comprehensive search of the Medline, Ebase, and the Cochrane Library electronic databases. A systematic review and quantitative analysis of comparative studies reporting the effect of insulin use on the incidence of macular edema was performed. All analyses were performed using the Review Manager (RevMan) v.5 (Nordic Cochrane Centre, Copenhagen, Denmark). Results: A total of 202 905 individuals were included in the present meta-analysis. In a random-effects meta-anal-ysis, the use of insulin was found to be associated with increased risk of macular edema (RR, 3.416; 95% CI, 2.147-4.829; >2, 86.6%). Analysis that just included high-quality studies showed that insulin use increased the risk of macular edema (RR, 2.728; 95% CI, 1.881-3.955; >2, 77.7%). In cohort studies (RR, 4.509; 95% CI, 3.100-6.559; >2, 77.7%) but not in case-control studies (RR, 1.455; 95% CI, 0.520 to 4.066; >2, 95.9%), increased incidence of macular edema was observed. Conclusions: The results of this meta-analysis of observational studies demonstrate that insulin use is a risk factor for diabetic macular edema. However, available data are still sparse, and in-depth analyses of the assessed associations in the context of additional longitudinal studies are highly desirable to enable more precise estimates and a better understanding of the role of insulin use in incidence of diabetic macular edema.

Publication type: Journal: Article

Source: EMBASE
20. Title: Latanoprost for open-angle glaucoma (UKGTS): A randomised, multicentre, placebo-controlled trial

Abstract: Background Treatments for open-angle glaucoma aim to prevent vision loss through lowering of intraocular pressure, but to our knowledge no placebo-controlled trials have assessed visual function preservation, and the observation periods of previous (unmasked) trials have typically been at least 5 years. We assessed vision preservation in patients given latanoprost compared with those given placebo. Methods In this randomised, triple-masked, placebo-controlled trial, we enrolled patients with newly diagnosed open-angle glaucoma at ten UK centres (tertiary referral centres, teaching hospitals, and district general hospitals). Eligible patients were randomly allocated (1:1) with a website-generated randomisation schedule, stratified by centre and with a permuted block design, to receive either latanoprost 0.005% (intervention group) or placebo (control group) eye drops. Drops were administered from identical bottles, once a day, to both eyes. The primary outcome was time to visual field deterioration within 24 months. Analyses were done in all individuals with follow-up data. The Data and Safety Monitoring Committee (DSMC) recommended stopping the trial on Jan 6, 2011 (last patient visit July, 2011), after an interim analysis, and suggested a change in primary outcome from the difference in proportions of patients with incident progression between groups to time to visual field deterioration within 24 months. This trial is registered, number ISRCTN96423140. Findings We enrolled 516 individuals between Dec 1, 2006, and March 16, 2010. Baseline mean intraocular pressure was 196 mm Hg (SD 46) in 258 patients in the latanoprost group and 201 mm Hg (48) in 258 controls. At 24 months, mean reduction in intraocular pressure was 38 mm Hg (40) in 231 patients assessed in the latanoprost group and 09 mm Hg (38) in 230 patients assessed in the placebo group. Visual field preservation was significantly longer in the latanoprost group than in the placebo group: adjusted hazard ratio (HR) 044 (95% CI 028-069; p=00003). We noted 18 serious adverse events, none attributable to the study drug. Interpretation This is the first randomised placebo-controlled trial to show preservation of the visual field with an intraocular-pressure-lowering drug in patients with open-angle glaucoma. The study design enabled significant differences in vision to be assessed in a relatively short observation period. Funding Pfizer, UK National Institute for Health Research Biomedical Research Centre.
21. Title: Long-term outcomes on lens clarity after lens-sparing vitrectomy for retinopathy of prematurity
Citation: Ophthalmology, April 2015, vol./is. 122/4(755-759), 0161-6420;1549-4713 (01 Apr 2015)
Language: English
Abstract: Objective To describe the long-term effect of lens-sparing vitrectomy surgery for advanced retinopathy of prematurity (ROP) on lens clarity. Design Retrospective case series at a single tertiary referral pediatric vitreoretinal practice. Participants Four hundred ninety-six eyes from 351 patients were included. Methods A retrospective chart review was conducted of patients with diagnosis of ROP stage 4A, 4B, and 5 who underwent lens-sparing vitrectomy (LSV) between 1992 and 2013. Data were collected from patient charts, including gender, date of birth, gestational age at birth, birthweight, stage of ROP at presentation, initial treatment (laser or cryotherapy), date of LSV, date of lensectomy (if performed), lens status at time of lensectomy, date of last visit, lens status at last visit, subsequent retinal surgeries, and retinal attachment status at last visit. Patients were excluded if any surgery had been performed at an outside institution before referral, or if a scleral buckle had been placed. Eyes with a concurrent anatomic abnormality, such as coloboma or microcornea, or a known family history of familial exudative vitreoretinopathy (FEVR), were also excluded. Main Outcome Measures Retinal reattachment after LSV, lensectomy after LSV, lens opacity at the time of lensectomy, and lens clarity at last follow-up. Results Four hundred ninety-six eyes from 351 patients met inclusion criteria for this study. The reattachment rate after a single LSV surgery was 82.1% for stage 4A, 69.5% for stage 4B, and 42.6% for stage 5. Subsequent retinal surgeries were required in 19.8% of eyes, with 88.7% of them including a lensectomy. Among eyes requiring lensectomy, 75% occurred within the first year after LSV surgery. Lens opacities were present in 26.6% of eyes at the time of lensectomy. Of all eyes in this series, 5.9% required lensectomy because of lens opacity. Conclusions This study demonstrates that lens clarity is observed in most eyes after LSV surgery for advanced ROP for the patient's childhood. Within the first decade of life, if necessary, lensectomy after LSV occurred mostly within 1 year following LSV.

22. Title: Myopia and glaucoma: sorting out the difference
Citation: Current opinion in ophthalmology, March 2015, vol./is. 26/2(90-95), 1531-7021 (01 Mar 2015)
Author(s): Hsu C.-H., Chen R.I., Lin S.C.
Language: English
Abstract: PURPOSE OF REVIEW: The aim of the present review was to summarize the evidence implicating the association between myopia and glaucoma, the possible underlying mechanisms for this relation, and the controversies surrounding detection of glaucomatous changes in coexisting myopia. SUMMARY: The interaction of myopia with glaucoma risk remains complex, largely because of the retinal and nerve fiber layer damage that occurs in myopia alone. Whether to treat for glaucoma relies on the suspicion level of the clinician who must consider other risk factors for vision loss. Ultimately, it is the progression of glaucoma-like findings that determines whether a myopic patient has glaucoma. RECENT FINDINGS: Numerous studies have shown that increasing categories of myopia are associated with a higher risk for optic neuropathy and glaucoma-like visual field defects. Recently, some high-resolution imaging modalities have been developed that aid further detection of the microanatomical changes of the optic nerve head and thus may provide a new insight to explain the association between myopia and glaucoma. Although the highly myopic eye usually shows many structural and functional defects that are difficult to distinguish from those caused by glaucoma, some new methods have been introduced to better differentiate between these changes.

23. Title: Neuropathic ocular pain: An important yet underevaluated feature of dry eye
Citation: Eye (Basingstoke), March 2015, vol./is. 29/3(301-312), 0950-222X;1476-5454 (15 Mar 2015)
Author(s): Galor A., Levitt R.C., Felix E.R., Martin E.R., Sarantopoulos C.D.
Language: English
Abstract: Dry eye has gained recognition as a public health problem given its prevalence, morbidity, and cost
implications. Dry eye can have a variety of symptoms including blurred vision, irritation, and ocular pain. Within dry eye-associated ocular pain, some patients report transient pain whereas others complain of chronic pain. In this review, we will summarize the evidence that chronicity is more likely to occur in patients with dysfunction in their ocular sensory apparatus (ie, neuropathic ocular pain). Clinical evidence of dysfunction includes the presence of spontaneous dysesthesias, allodynia, hyperalgesia, and corneal nerve morphologic and functional abnormalities. Both peripheral and central sensitizations likely play a role in generating the noted clinical characteristics. We will further discuss how evaluating for neuropathic ocular pain may affect the treatment of dry eye-associated chronic pain.

Publication type: Journal: Review
Source: EMBASE
Full text: Available Eye (London, England) at Salisbury District Hospital Healthcare Library

24. Title: Optic nerve lymphoma: Report of two cases and review of the literature
Citation: Survey of Ophthalmology, March 2015, vol./is. 60/2(153-165), 0039-6257;1879-3304 (01 Mar 2015)
Author(s): Kim J.L., Mendoza P.R., Rashid A., Hayek B., Grossniklaus H.E.
Language: English
Abstract: Lymphoma may involve the optic nerve as isolated optic nerve lymphoma or in association with central nervous system (CNS) or systemic lymphoma. We present two biopsy-proven non-Hodgkin lymphomas of the optic nerve and compare our findings with previously reported cases. We discuss the mechanism of metastasis, classification of optic nerve involvement, clinical features, radiologic findings, optic nerve biopsy indications and techniques, histologic features, and treatments. We propose a classification system of optic nerve lymphoma: isolated optic nerve involvement, optic nerve involvement with CNS disease, optic nerve involvement with systemic disease, and optic nerve involvement with primary intraocular lymphoma. Although it is an uncommon cause of infiltrative optic neuropathy, optic nerve metastasis should be considered in patients with a history of lymphoma. The recommended approach to a patient with presumed optic nerve lymphoma includes neuroimaging and cerebrospinal fluid evaluation as part of the initial workup, then judicious use of optic nerve biopsy, depending on the clinical situation.

Publication type: Journal: Review
Source: EMBASE
Full text: Available Elsevier at Salisbury District Hospital Healthcare Library
Full text: Available Elsevier at Survey of Ophthalmology

25. Title: Orthokeratology to control myopia progression: A meta-analysis
Citation: PLoS ONE, April 2015, vol./is. 10/4, 1932-6203 (09 Apr 2015)
Language: English
Abstract: Objective: To evaluate the clinical treatment effects of orthokeratology to slow the progression of myopia. Methods: Several well-designed controlled studies have investigated the effects of orthokeratology in school-aged children. We conducted this meta-analysis to better evaluate the existing evidence. Relevant studies were identified in the Medline and Embase database without language limitations. The main outcomes included axial length and vitreous chamber depth reported as the mean +/- standard deviation. The results were pooled and assessed with a fixed-effects model analysis. Subgroup analyses were performed according to geographical location and study design. Results: Of the seven eligible studies, all reported axial length changes after 2 years, while two studies reported vitreous chamber depth changes. The pooled estimates indicated that change in axial length in the ortho-k group was 0.27 mm (95% confidence interval [CI]: 0.22, 0.32) less than the control group. Myopic progression was reduced by approximately 45%. The combined results revealed that the difference in vitreous chamber depth between the two groups was 0.22 mm (95% confidence interval [CI]: 0.14, 0.31). None of the studies reported severe adverse events. Conclusion: The overall findings suggest that ortho-k can slow myopia progression in school-aged children.

Publication type: Journal: Article
Source: EMBASE
Full text: Available ProQuest at PLoS ONE
Full text: Available ProQuest at PLoS One

26. Title: Personalized therapeutic strategies for patients with retinitis pigmentosa
Citation: Expert Opinion on Biological Therapy, March 2015, vol./is. 15/3(391-402), 1471-2598;1744-7682 (01 Mar 2015)
Author(s): Zheng A., Li Y., Tsang S.H.
Language: English
Abstract: Introduction: Retinitis pigmentosa (RP) encompasses many different hereditary retinal degenerations that are caused by a vast array of different gene mutations and have highly variable disease presentations and severities. This heterogeneity poses a significant therapeutic challenge, although an answer may eventually be found through two recent innovations: induced pluripotent stem cells (iPSCs) and clustered regularly interspaced short palindromic repeats (CRISPR)/Cas genome editing. Areas covered: This review discusses the wide-ranging applications of iPSCs and CRISPR-including disease modelling, diagnostics and therapeutics-with an ultimate view towards understanding how these two technologies can come together to address disease heterogeneity and orphan genes in a novel personalized medicine platform. An extensive literature search was conducted in PubMed and Google Scholar, with a particular focus on high-impact research published within the last 1-2 years and centered broadly on the subjects of retinal gene therapy, iPSC-derived outer retina cells, stem cell transplantation and CRISPR/Cas gene editing. Expert opinion: For the retinal pigment epithelium, autologous transplantation of gene-corrected grafts derived from iPSCs may well be technically feasible in the near future. Photoreceptor transplantation faces more significant unresolved technical challenges but remains an achievable, if more distant, goal given the rapid pace of advancements in the field.
Publication type: Journal: Review
Source: EMBASE

27.Title: Psychologic adjustment to irreversible vision loss in adults: A systematic review
Citation: Ophthalmology, April 2015, vol./is. 122/4(851-861), 0161-6420;1549-4713 (01 Apr 2015)
Author(s): Senra H., Barbosa F., Ferreira P., Vieira C.R., Perrin P.B., Rogers H., Rivera D., Leal I.
Language: English
Abstract: Purpose To summarize relevant evidence investigating the psychologic adjustment to irreversible vision loss (IVL) in adults. Design Irreversible vision loss entails a challenging medical condition in which rehabilitation outcomes are strongly dependent on the patient’s psychologic adjustment to illness and impairment. So far, no study has systematically reviewed the psychologic adjustment to IVL in adults. Methods We reviewed all articles examining the psychologic adjustment to IVL in adults. We included articles published in English in peer-reviewed journals. We performed a keyword literature search using 4 databases (PubMed, EBSCO, Cochrane Library, and Science Direct) for all years through July 2014. We assessed risk of bias of selected studies using the RTI Item Bank for Assessing Risk of Bias and Confounding for Observational Studies of Interventions or Exposures and the Cochrane risk of bias tool for randomized controlled trials. Results Of a total of 3948 citations retrieved, we selected 52 eligible studies published between 1946 and 2014. The majority of studies were observational and cross-sectional in nature. Our review suggests that high levels of depression occur during the adjustment to IVL. Better adjustment to IVL was associated with greater acceptance of vision loss and use of instrumental coping, good social support, positivity, and use of assistive aids. Conclusions The overall findings indicate that IVL often has negative effects on patients’ quality of life and mental health and that such effects tend to remain over time. Specific factors and variables associated with the adjustment to IVL need to be clarified through further in-depth and longitudinal research.
Publication type: Journal: Article
Source: EMBASE
Full text: Available Ophthalmology at Salisbury District Hospital Healthcare Library

28.Title: Reshaping procedures for the surgical management of corneal ectasia
Citation: Journal of Cataract and Refractive Surgery, April 2015, vol./is. 41/4(842-872), 0886-3350;1873-4502 (01 Apr 2015)
Language: English
Abstract: Corneal ectasia is a progressive, degenerative, and noninflammatory thinning disorder of the cornea. Recently developed corneal reshaping techniques have expanded the treatment armamentarium available to the corneal specialist by offering effective nontransplant options. This review summarizes the current evidence base for corneal collagen crosslinking, topography-guided photorefractive keratectomy, and intrastromal corneal ring segment implantation for the treatment of corneal ectasia by analyzing the data published between the years 2000 and 2014. Financial Disclosure No author has a financial or proprietary interest in any material or method mentioned.
Publication type: Journal: Review
29. Title: Retinal microglia: Just bystander or target for therapy?
Citation: Progress in Retinal and Eye Research, March 2015, vol./is. 45/(30-57), 1350-9462;1873-1635 (01 Mar 2015)
Author(s): Karlstetter M., Scholz R., Rutar M., Wong W.T., Provis J.M., Langmann T.
Language: English
Abstract: Resident microglial cells can be regarded as the immunological watchdogs of the brain and the retina. They are active sensors of their neuronal microenvironment and rapidly respond to various insults with a morphological and functional transformation into reactive phagocytes. There is strong evidence from animal models and in situ analyses of human tissue that microglial reactivity is a common hallmark of various retinal degenerative and inflammatory diseases. These include rare hereditary retinopathies such as retinitis pigmentosa and X-linked juvenile retinoschisis but also comprise more common multifactorial retinal diseases such as age-related macular degeneration, diabetic retinopathy, glaucoma, and uveitis as well as neurological disorders with ocular manifestation. In this review, we describe how microglial function is kept in balance under normal conditions by cross-talk with other retinal cells and summarize how microglia respond to different forms of retinal injury. In addition, we present the concept that microglia play a key role in local regulation of complement in the retina and specify aspects of microglial aging relevant for chronic inflammatory processes in the retina. We conclude that this resident immune cell of the retina cannot be simply regarded as bystander of disease but may instead be a potential therapeutic target to be modulated in the treatment of degenerative and inflammatory diseases of the retina.
Publication type: Journal: Review
Source: EMBASE

30. Title: Retinopathy of prematurity: Recent developments in diagnosis and treatment
Citation: Expert Review of Ophthalmology, April 2015, vol./is. 10/2(167-182), 1746-9899;1746-9902 (01 Apr 2015)
Author(s): Lorenz B., Stieger K.
Language: English
Abstract: Retinopathy of prematurity (ROP) is a potentially blinding disorder of extremely premature infants caused by un-physiologic oxygen supply within the first weeks of life. The disease is characterized by uncontrolled vessel growth at the border of the vascularized zone, in severe cases leading to vitreoretinal tractions and retinal detachment. About 3-5% of all ROP cases need treatment at some point. The use of digital wide-field fundus photography, fluorescein angiography and optical coherence tomography as diagnostic tools generated a wealth of information about early disease features and treatment effects. Currently, intravitreal anti-VEGF injections are considered by many to be the optimal treatment approach for the most severe forms of Type 1 ROP, even though the pharmacological risks in terms of organ development and mortality rate have not yet been fully addressed.
Publication type: Journal: Review
Source: EMBASE

31. Title: Screening for retinopathy of prematurity (ROP) using wide-angle digital retinal photography by non-ophtalmologists: A systematic review
Citation: British Journal of Ophthalmology, March 2015, vol./is. 99/3(281-288), 0007-1161;1468-2079 (01 Mar 2015)
Author(s): Athikarisamy S.E., Patole S., Lam G.C., Dunstan C., Rao S.
Language: English
Abstract: Retinopathy of prematurity (ROP) is one of the leading and preventable causes of blindness. The investigation of choice for diagnosing ROP is binocular indirect ophthalmoscope (BIO) done by ophthalmologists. Since the number of ophthalmologists available to do BIO examination is limited, especially in developing countries, there is a need for an alternate, cheap, reliable and feasible test. Telemedicine imaging with Digital Retinal Photography (DRP) is one such alternate diagnostic test which can be performed easily by non-opthalmologists, with adequate training. Our objective was to conduct a systematic review to evaluate the accuracy of DRP performed by trained personnel (non-opthalmologists) in diagnosing clinically signficant ROP. Medline, EMBASE, CINAHL and Cochrane databases were searched independently by two authors. Eligible studies were assessed using the Quality Assessment of Diagnostic Accuracy Studies (QUADAS)-2, an evidencebased tool for the assessment of quality in systematic reviews of diagnostic accuracy studies. Six were included in the review (three prospective; N=120, three retrospective; N=579). Studies had methodological limitations on QUADAS-2. Because of the heterogeneity of studies, data could not be pooled to derive singleeffect size estimates for sensitivity and specificity. The included studies reported sensitivity of 45.5-100% with the majority being more than 90%; specificity 61.7-99.8% with the majority being more than 90%, positive predictive value 61.5-96.6% and negative predictive value of 76.9-100% for
diagnosing clinically significant ROP. We conclude that diagnostic accuracy of DRP must be established in prospective studies with adequate sample size where DRP is compared against the simultaneously performed BIO examination.

**Publication type:** Journal: Article  
**Source:** EMBASE  
**Full text:** Available *The British journal of ophthalmology* at British Journal of Ophthalmology

### 32. Title: *Staphylococcus aureus infection of the optic nerve*

**Citation:** Journal of Neuro-Ophthalmology, March 2015, vol./is. 35/1(48-50), 1070-8022;1536-5166 (28 Mar 2015)  
**Author(s):** Osmanovic S., Al-Heeti O.M., Lin A.Y., Zivin S.P., Justo J.A., Mayer S.M., Aakalu V.K., Moss H.E., Patell M.C.  
**Language:** English  
**Abstract:** A 71-year-old woman presented with painful vision loss in the right eye followed by ophthalmoplegia. Magnetic resonance imaging demonstrated optic nerve sheath enlargement and enhancement. Biopsy of the optic nerve sheath revealed purulent and necrotic material that was positive for methicillin-sensitive *Staphylococcus aureus*. The patient underwent enucleation of the right eye and was treated with systemic antibiotics with clinical stabilization. Imaging, pathological and treatment aspects of optic nerve sheath abscess are discussed.

**Publication type:** Journal: Review  
**Source:** EMBASE

### 33. Title: *Surgical complications of primary rhegmatogenous retinal detachment: A meta-analysis*

**Citation:** PLoS ONE, March 2015, vol./is. 10/3, 1932-6203 (03 Mar 2015)  
**Author(s):** Lv Z., Li Y., Wu Y., Qu Y.  
**Language:** English  
**Abstract:** Background: To investigate the surgical complications of scleral buckling (SB) and pars plana vitrectomy (PPV) performed on primary rhegmatogenous retinal detachment (RRD) and to discover which surgical procedures bring fewer complications. Methods: An electronic literature search using the PubMed database, ISI Web of Knowledge and the Cochrane Central Register of Controlled Trials to identify randomized controlled trials and observational studies comparing SB with PPV on primary RRD. Outcome measures included intra-operative complications and early and late post-operative complications. Results: During the operation, significantly less subretinal hemorrhage occurred in the PPV group than in the SB group (OR = 4.71; 95%CI, 1.33-16.64; p = 0.02) and the hypotony incidence was significantly higher in the SB group (OR = 18.24; 95%CI, 2.37-140.44; p = 0.005); however, the occurrence of iatrogenic breaks was significantly lower in the SB group (OR = 0.05; 95%CI, 0.01-0.21; p<0.0001). In the early stage of post-operation, significantly higher incidence of choroidal detachment was identified in the SB group than in the PPV group (OR = 10.19; 95%CI, 2.36-44.09; p = 0.002); patients undergoing SB had significantly higher odds of residual subretinal fluid (OR = 14.71; 95%CI, 1.84-117.32; p = 0.01); the occurrence of high intraocular pressure was significantly lower in the SB group (OR = 0.46; 95%CI, 0.23-0.89; p = 0.02); and no significant difference was shown in the incidence of epithelia defect (p = 0.37) between the two groups. In the late stage of post-operation, the incidence of diplopia/extraocular muscle dysfunction was significantly higher in the SB group (OR = 4.04; 95%CI, 1.30-12.52; p = 0.02); and significantly less cataract was observed in the SB group (OR = 0.20; 95%CI, 0.14-0.30; p<0.0001); no significant difference was found in the incidences of cystoid macular edema (p = 0.65), macular pucker (p = 0.52), post-operative proliferative vitreoretinopathy (p = 0.73) and epiretinal membrane (p = 0.47) in other late post-operative complications. Conclusions: This meta-analysis suggests that PPV could be considered as potential surgical management on primary RRD.

**Publication type:** Journal: Article  
**Source:** EMBASE  
**Full text:** Available *ProQuest* at *PLoS ONE*  
**Full text:** Available *ProQuest* at *PLoS One*

### 34. Title: *Systematic review, meta-analysis and mixed treatment comparison of intravitreal aflibercept with other therapies in patients with diabetic macular oedema*

**Citation:** Diabetic Medicine, March 2015, vol./is. 32/(190), 0742-3071 (March 2015)  
**Author(s):** Kleijnen J., Korobelnik J.F., Lang S.H., Birnie R., Leadley R.M., Misso K., Worthy G., Muston D., Do D.V.  
**Language:** English  
**Abstract:** Aims: This systematic review evaluated the clinical effectiveness of intravitreal aflibercept (IVT-AFL) compared with other therapies for diabetic macular oedema. No meta-analyses have included key IVT-AFL studies (VIVID-DME and VISTA-DME) using comprehensive heterogeneity assessment. Methods: A comprehensive search was undertaken to source relevant randomised controlled trials. Feasibility networks were prepared to identify viable comparisons. Pooled effect sizes [mean difference (MD) or relative risk (RR)] were calculated using fixed and
random effects models. Indirect comparisons were performed [to evaluate IVT-AFL 2mg every 8 weeks (2q8) following five initial monthly injections vs ex-US-licensed alternatives] using Bucher analysis and mixed treatment comparison (MTC). Results: Ten comparable studies were found relevant to indirect comparison with ranibizumab 0.5mg as needed (IVR). IVT-AFL 2q8 following five initial monthly injections improved the mean best-corrected visual acuity change from baseline to a greater extent than IVR. The 12 month MDs were 4.67 letters [95% credible interval (CrI) 2.45-6.87] (MTC; 10 studies; n=3,060) and 4.82 letters [95% confidence interval (CI) 2.52-7.11] (Bucher; four studies; n=1,611). IVT-AFL also reduced the loss of >10 Early Treatment Diabetic Retinopathy Study letters compared with IVR. The 12 month RR was 0.27 (95% CrI 0.07-0.90) (MTC; six studies; n=2,810). There were no significant differences between IVT-AFL and IVR in other efficacy or safety outcomes. The RR for all serious ocular adverse events was 0.28 (95% CrI 0.06-1.24) (MTC; five studies; n=1,739). Conclusions: IVT-AFL showed improved 12 month visual acuity compared with IVR based on indirect analyses; however, some methodological limitations need to be considered.

**Publication type:** Journal: Conference Abstract

**Source:** EMBASE

35. **Title:** The diagnostic accuracy of bedside ocular ultrasonography for the diagnosis of retinal detachment: a systematic review and meta-analysis

**Citation:** Annals of emergency medicine, February 2015, vol./is. 65/2(199-203.e1), 1097-6760 (01 Feb 2015)

**Author(s):** Seupaul R.A.

**Language:** English

**Abstract:** The diagnostic accuracy of emergency department (ED) ocular ultrasonography may be sufficient for diagnosing retinal detachment. We systematically reviewed the literature to determine the diagnostic accuracy of ED ocular ultrasonography for the diagnosis of retinal detachment. This review conformed to the recommendations from the Meta-analysis of Observational Studies in Epidemiology statement. An experienced medical librarian searched the following databases from their inception, without language restrictions: Ovid MEDLINE, PubMed, EMBASE, the Cochrane Library, Emergency Medical Abstracts, and Google Scholar. Content experts were contacted and bibliographies of relevant studies were reviewed to identify additional references. Evidence quality was independently assessed by 2 investigators using the revised Quality Assessment Tool for Diagnostic Accuracy Studies (QUADAS-2). Discrepancies were resolved by consensus or adjudication by a third reviewer. Diagnostic test characteristics were summarized and reported with 95% confidence intervals. Of 7,771 unique citations identified, 78 were selected for full-text review, resulting in 4 trials assessed for quality. Agreement between authors' QUADAS-2 scoring was good (kappa=0.63). Three trials were deemed to have a low risk of bias. They enrolled ED-based patients (N=201) and evaluated clinician-performed bedside ocular ultrasonography, using either a 7.5- or 10-MHz linear-array probe. Two trials included patients who had retinal detachment from trauma. The prevalence of retinal detachment ranged from 15% to 38%. Sensitivity and specificity ranged from 97% to 100% and 83% to 100%, respectively. The results of the bedside ocular ultrasonography were compared with the reference standard of an ophthalmologic evaluation; one trial also included orbital computed tomography findings suggestive of retinal detachment. Bedside ocular ultrasonography has a high degree of accuracy in identifying retinal detachment, according to 3 small prospective investigations. Larger prospective validation of these findings would be valuable.

**Publication type:** Journal: Article

**Source:** EMBASE

36. **Title:** The dynamic sclera: Extracellular matrix remodeling in normal ocular growth and myopia development

**Citation:** Experimental Eye Research, April 2015, vol./is. 133/(100-111), 0014-4835;1096-0007 (April 01, 2015)

**Author(s):** Harper A.R., Summers J.A.

**Language:** English

**Abstract:** Myopia is a common ocular condition, characterized by excessive elongation of the ocular globe. The prevalence of myopia continues to increase, particularly among highly educated groups, now exceeding 80% in some groups. In parallel with the increased prevalence of myopia, are increases in associated blinding ocular conditions including glaucoma, retinal detachment and macular degeneration, making myopia a significant global health concern. The elongation of the eye is closely related to the biomechanical properties of the sclera, which in turn are largely dependent on the composition of the scleral extracellular matrix. Therefore an understanding of the cellular and extracellular events involved in the regulation of scleral growth and remodeling during childhood and young adulthood will provide future avenues for the treatment of myopia and its associated ocular complications.

**Publication type:** Journal: Review

**Source:** EMBASE

**Full text:** Available Elsevier at Experimental Eye Research
37. Title: The protective effect of erythropoietin on the retina  
Citation: Ophthalmic Research, March 2015, vol./is. 53/2(74-81), 0030-3747;1423-0259 (06 Mar 2015)  
Author(s): Luo W., Hu L., Wang F.  
Language: English  
Abstract: Erythropoietin (Epo) was once considered to be a regulator of erythropoiesis by controlling the apoptosis, proliferation and differentiation of erythroid precursor cells over an extended period of time. However, the expression of Epo and Epo receptor (Epo-R) occurs in the brain and retina in addition to the kidney. These expression behaviors lead to physiological effects in addition to hematocrit elevation. In this review we discuss the protective effect of Epo on retinal cells.  
Publication type: Journal: Review  
Source: EMBASE

38. Title: The relationship between socio-economic status and access to eye health services in the UK: A systematic review  
Citation: Public Health, February 2015, vol./is. 129/2(94-102), 0033-3506;1476-5616 (01 Feb 2015)  
Author(s): Knight A., Lindfield R.  
Language: English  
Abstract: Objectives: Lower socio-economic status has been shown to adversely affect access to general health care. This study aims to determine the existence and nature of an association between socio-economic status and access to eye health services in the UK. Study design: Systematic review. Methods: Search terms were run in four databases and reviewed against a pre-agreed set of inclusion and exclusion criteria by two independent reviewers. Quality of studies was assessed according to calculations of statistical significance, size of effect, primary research question and a quality score against an adapted STROBE checklist. Results: Good quality studies included in the review most commonly concluded that lower socio-economic groups had less access to eye health services than higher socio-economic groups. However there were a comparable number of studies that concluded that there was no association. This discrepancy was largely attributed to different ways of measuring socio-economic status, access, and types of eye health services, and so studies did not compare the same thing. The evidence base was of low quality, limiting the ability of this review to make definitive conclusions. Conclusions: The review concluded that there is equal and weak evidence of lower socio-economic groups having reduced access to eye health services in the UK, and there being no association. This subject would benefit from further research to improve the quality of the evidence base.  
Publication type: Journal: Review  
Source: EMBASE

39. Title: Therapies for macular edema associated with central retinal vein occlusion: A report by the American Academy of Ophthalmology  
Citation: Ophthalmology, April 2015, vol./is. 122/4(769-778), 0161-6420;1549-4713 (01 Apr 2015)  
Author(s): Yeh S., Kim S.J., Ho A.C., Schoenberger S.D., Bakri S.J., Ehlers J.P., Thorne J.E., Emptage N.  
Language: English  
Abstract: Purpose To review the available evidence regarding the safety and efficacy of therapies for the treatment of macular edema (ME) associated with central retinal vein occlusion (CRVO). Methods A literature search of the PubMed database was last conducted in March 2014 with no date restrictions but limited to articles published in English. A literature search of the Cochrane Library was also conducted in March 2014 with no date restrictions and without a language limitation. The combined searches yielded 108 citations, of which 20 were deemed clinically relevant for the Ophthalmic Technology Assessment Committee Retina/Vitreous panel to review in full text. Three additional studies were also identified for panel review. The level of evidence of these selected studies was reviewed by the panel methodologist. Results There were 7 citations representing 4 clinical trials that provided level I evidence supporting the use of anti-vascular endothelial growth factor (VEGF) pharmacotherapies for ME associated with CRVO, including intravitreal ranibizumab (2), aflibercept (3), and bevacizumab (2). There were 3 citations representing 2 studies with level I evidence for intravitreal corticosteroid injection with dexamethasone intravitreal implant (2 citations) or triamcinolone (1 citation), although cataract and glaucoma were observed in these studies. Level I evidence is available on the limited benefit of macular grid-pattern laser photocoagulation (1 citation). Eight other citations reviewed were rated as level II, and 4 citations were rated as level III. Long-term efficacy results (>2 years of follow-up) are limited to intravitreal ranibizumab at this time, and few studies have evaluated combination therapy with anti-VEGF and corticosteroid versus monotherapy of either class of drug. Conclusions Level I evidence indicates that intravitreal anti-VEGF pharmacotherapy is safe and effective over 2 years for ME associated with CRVO.
and that delay in treatment is associated with worse visual outcomes. In addition, level I evidence demonstrates short-term efficacy of intravitreal corticosteroid but also an association with a higher frequency of adverse events.

**Publication type:** Journal: Article  
**Source:** EMBASE  
**Full text:** Available Ophthalmology at Salisbury District Hospital Healthcare Library  
**Full text:** Available Ophthalmology at Ophthalmology

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