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MD Research News

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Drug treatment

BMJ. 2012 Jul 4;345:e4203. doi: 10.1136/bmj.e4203.

Adverse events with intravitreal injection of vascular endothelial growth factor inhibitors: nested case-control study.

Campbell RJ, Gill SS, Bronskill SE, Paterson JM, Whitehead M, Bell CM.

Department of Ophthalmology, Queen's University, Kingston, ON, Canada.

OBJECTIVE: To assess the risk of systemic adverse events associated with intravitreal injections of vascular endothelial growth factor inhibiting drugs.

DESIGN: Population based nested case-control study.

SETTING: Ontario, Canada.

PARTICIPANTS: 91 378 older adults with a history of physician diagnosed retinal disease identified between 1 April 2006 and 31 March 2011. Cases were 1477 patients admitted to hospital for ischaemic stroke, 2229 admitted for an acute myocardial infarction, 1059 admitted or assessed in an emergency department for venous thromboembolism, and 2623 admitted for congestive heart failure. Event-free controls (at a ratio of 5:1) were matched to cases on the basis of year of birth, sex, history of the outcome in the previous 5 years, and diabetes.

MAIN EXPOSURE MEASURE: Exposure to vascular endothelial growth factor inhibiting drugs identified within 180 days before the index date.

RESULTS: After adjustment for potential confounders, participants who had ischaemic stroke, acute myocardial infarction, congestive heart failure, or venous thromboembolism were not more likely than control participants to have been exposed to either bevacizumab (adjusted odds ratios of 0.95 (95% confidence interval 0.68 to 1.34) for ischaemic stroke, 1.04 (0.77 to 1.39) for acute myocardial infarction, 0.81 (0.49 to 1.34) for venous thromboembolism, and 1.21 (0.91 to 1.62) for congestive heart failure) or ranibizumab (adjusted odds ratios 0.87 (0.68 to 1.10) for ischaemic stroke, 0.90 (0.72 to 1.11) for acute myocardial infarction, 0.88 (0.67 to 1.16) for venous thromboembolism, and 0.87 (0.70 to 1.07) for congestive heart failure). Similarly, a secondary analysis of exclusive users of bevacizumab or ranibizumab showed no differences in risk between the two drugs (adjusted odds ratios for bevacizumab relative to ranibizumab of 1.03 (0.67 to 1.60) for ischaemic stroke, 1.23 (0.85 to 1.77) for acute myocardial infarction, 0.92 (0.51 to 1.69) for venous thromboembolism, and 1.35 (0.93 to 1.95) for congestive heart failure). These findings were consistent for all but one outcome in subgroup analyses.

CONCLUSIONS: Intravitreal injections of bevacizumab and ranibizumab were not associated with significant risks of ischaemic stroke, acute myocardial infarction, congestive heart failure, or venous thromboembolism.

PMID: 22763393 [PubMed - in process]

Ophthalmologe. 2012 Jul 4. [Epub ahead of print]

[Minimally invasive therapy of submacular hemorrhage in exudative age-related macular degeneration.]

[Article in German]

Ritzau-Tondrow U, Baraki H, Hoerauf H.

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BACKGROUND: The purpose of this prospective observational study was to analyze the efficacy and safety of a minimally invasive approach in patients with subretinal hemorrhage secondary to exudative age-related macular degeneration (ARMD).

METHODS: A total of 34 eyes from 33 patients with submacular hemorrhage due to exudative ARMD were included in the study and 18 of the 33 patients were under anticoagulant medication. Combined subretinal injection of recombinant tissue plasminogen activator (rTPA) and bevacizumab with subsegment core vitrectomy and gas tamponade with 1.8-2.2 ml pure sulphur hexafluoride gas (SF6) was applied using a single pars plana incision. The follow up period was 1-17 months and median 4.5 months.

RESULTS: This approach achieved a sufficient SF6 gas filling in all cases without the requirement of strict face-down positioning. Postoperatively all patients had subjective improvement of central visual field. Visual acuity increased in 16 out of 33 patients and 12 out of 33 patients remained unchanged. As complications seven tears of the retinal pigment epithelium (RPE) and one recurrent subfoveal hemorrhage were observed, two cases of retinal detachment occurred and required buckling surgery. In 14 out of 33 patients further application of intravitreal anti-VEGF (vascular endothelial growth factor) was necessary.

CONCLUSION: This minimally invasive approach seems to be a feasible and effective method to displace subretinal hemorrhages with tenable results.

PMID: 22752626 [PubMed - as supplied by publisher]

Ophthalmologe. 2012 Jul 4. [Epub ahead of print]

[Subretinal co-application of rtPA and bevacizumab for exudative AMD with submacular hemorrhage : Compatibility and clinical long-term results.]

[Article in German]

Hillenkamp J, Klettner A, Puls S, Treumer F, Roider J.

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Abstract

Exudative age-related macular degeneration (AMD) is the most frequent cause of acute submacular hemorrhage (SMH). Without treatment the formation of a macular scar with poor visual function is the usual

outcome. While several surgical treatment approaches have been proposed to date, there is no general consensus regarding optimal treatment of acute SMH. Vitrectomy with subretinal co-application of recombinant tissue plasminogen activator (rtPA) and bevacizumab followed by a gas tamponade is a new approach which has shown promising functional results in clinical studies. The aim of the co-application of rtPA and bevacizumab is to simultaneously displace the submacular hemorrhage from the fovea and to effectively reduce choroidal new vessel activity. Experimental studies have shown that rtPA and bevacizumab are compatible in a co-application.

PMID: 22752624 [PubMed - as supplied by publisher]

LDI Issue Brief. 2012 Jun;17(8):1-4.

Comparing treatments for age-related macular degeneration: safety, effectiveness and cost.

Maguire MG.

Leonard Davis Institute of Health Economics (LDI), University of Pennsylvania, USA.

Abstract

Comparative effectiveness research (CER) has received widespread attention and federal funding because of its potential to inform and improve treatment decisions. Since 2005, patients and their ophthalmologists have faced a dilemma in treating age-related macular degeneration (AMD)--the leading cause of blindness in the United States. Two closely related drugs have produced dramatic improvements in vision; one has been rigorously tested for use in AMD patients, while the other has been rigorously tested for use in cancer patients, but is now widely used to treat AMD. One drug costs 40 times as much as the other. This Issue Brief summarizes a CER study comparing these drugs head-to-head, and provides the most definitive evidence to date about the safety and effectiveness of the two alternatives.

PMID: 22754971 [PubMed - in process]

Mayo Clin Health Lett. 2012 May;30(5):4.

Researchers study new treatment for macular degeneration.

[No authors listed]

PMID: 22754958 [PubMed - in process]

Other treatment & diagnosis

PLoS One. 2012;7(6):e39944. Epub 2012 Jun 29.

Quantification of visual field loss in age-related macular degeneration.

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BACKGROUND: An evaluation of standard automated perimetry (SAP) and short wavelength automated perimetry (SWAP) for the central 10-2 visual field test procedure in patients with age-related macular degeneration (AMD) is presented in order to determine methods of quantifying the central sensitivity loss in patients at various stages of AMD.

METHODS: 10-2 SAP and SWAP Humphrey visual fields and stereoscopic fundus photographs were collected in 27 eyes of 27 patients with AMD and 22 eyes of 22 normal subjects.

RESULTS: Mean Deviation and Pattern Standard Deviation (PSD) varied significantly with stage of disease in SAP (both p<0.001) and SWAP (both p<0.001), but post hoc analysis revealed overlap of functional values among stages. In SWAP, indices of focal loss were more sensitive to detecting differences in AMD from normal. SWAP defects were greater in depth and area than those in SAP. Central sensitivity (within 1°) changed by -3.9 and -4.9 dB per stage in SAP and SWAP, respectively. Based on defect maps, an AMD Severity Index was derived.

CONCLUSIONS: Global indices of focal loss were more sensitive to detecting early stage AMD from normal. The SWAP sensitivity decline with advancing stage of AMD was greater than in SAP. A new AMD Severity Index quantifies visual field defects on a continuous scale. Although not all patients are suitable for SWAP examinations, it is of value as a tool in research studies of visual loss in AMD.

PMID: 22768178 [PubMed - in process]

Expert Opin Drug Metab Toxicol. 2012 Jul 5. [Epub ahead of print]

Evaluation of verteporfin pharmakokinetics - redefining the need of photosensitizers in ophthalmology.

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Introduction: The benzoporphyrine derivative verteporfin has lost its importance to the treatment of the most frequent neovascular eye diseases. Nevertheless, it is still mandatory to define the remaining applications, role, and potential of verteporfin in ocular photodynamic therapy (PDT), including the dosages of administration, effectiveness, and safety profile.

Areas covered: Although verteporfin PDT has forfeited the first-line status and value of treating subfoveal choroidal neovascularization (CNV) due to age-related macular degeneration or pathologic myopia, the treatment remains the standard of care for choroidal haemangioma and polypoidal choroidal vasculopathy. PDT is effective in less pigmented choroidal melanoma as well as in retinal vascular proliferations and retinal angioma. Verteporfin was granted the orphan drug designation for the treatment of chronic or recurrent central serous chorioretinopathy (CSC).

Expert opinion: Evidence-based data regarding optimized parameters (low fluence, reduced dose, fractionated irradiation) adapted to the treated diseases (target structure, dosimetry, blood supply) are scarce. Prospective and large clinical trials are missing, although the scientific community agrees on the fact that the standard treatment protocol does not necessarily provide the optimal efficacy to the specific disease or individual patient. Within the reviewed indications, the adverse effect profile is favorable compared with other therapies.

PMID: 22762303 [PubMed - as supplied by publisher]

Int Ophthalmol. 2012 Jul 3. [Epub ahead of print]

Foveal retinoschisis misdiagnosed as bilateral amblyopia.

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Abstract

Juvenile foveal retinoschisis is one of the most common causes of bilateral macular degeneration in young boys. School age with accommodative esotropia may develop amblyopia due to late correction of hyperopia. Retinoschisis is hard to diagnose in patient with subtle macula change and hyperopic amblyopia. We report a case of bilateral foveal retinoschisis before and after treatment with topical dorzolamide, which was misdiagnosed as bilateral hyperopic amblyopia. Optical coherence tomography should be considered in diagnostic procedures of children with hyperopic amblyopia.

PMID: 22752678 [PubMed - as supplied by publisher]

Ophthalmic Surg Lasers Imaging. 2012 Jul 5:1-9. doi: 10.3928/15428877-20120628-01. [Epub ahead of print]

Comparison of Features on SD-OCT Between Acute Central Serous Chorioretinopathy and Exudative Age-Related Macular Degeneration.

Ahn SJ, Kim TW, Huh JW, Yu HG, Chung H.

BACKGROUND AND OBJECTIVE: To compare the spectral-domain optical coherence tomography (SD-OCT) features of acute central serous chorioretinopathy (CSC) versus exudative age-related macular degeneration (AMD) and explore disease-specific features of each disease.

PATIENTS AND METHODS: SD-OCT images obtained at the time of diagnosis in 39 eyes with acute CSC (symptom onset < 2 months) and 52 eyes with exudative AMD were compared. Multiple regression analysis was performed to identify disease-specific features. The relationship between anatomical findings and visual function was also assessed.

RESULTS: There were significant morphologic differences on SD-OCT between the two diseases, including the presence and height of retinal fluid and morphologic changes of retinal pigment epithelium (RPE). Multiple regression analysis revealed that a reflective band with posterior shadowing was a disease-specific finding indicating exudative AMD; however, other SD-OCT findings were attributed to differences in age of onset between the two diseases. Visual acuity was correlated with subretinal fluid in CSC, whereas pigment epithelial detachment, intraretinal fluid, and diverse RPE morphologic abnormalities were associated with visual decline in exudative AMD.

CONCLUSION: A reflective band with posterior shadowing is a disease-specific feature of exudative AMD that may be useful for the differential diagnosis. High-resolution SD-OCT images of the retinal layers identified distinguishing pathologic features of the outer retina between the two diseases. The OCT features associated with visual function were different between the two diseases.

PMID: 22767337 [PubMed - as supplied by publisher]

Med Phys. 2012 Jun;39(6):3815.

SU-E-T-477: Influence of Eye Size on Radiation Absorbed Dose Delivered to Non- Targeted Tissues during Stereotactic Radiosurgery for Age-Related Macular Degeneration.

Cantley J, Chell E, Firpo M, Hanlon J, Lee C, Bolch W.

University Florida, Gainesville, FL.

Purpose: This work determines how variations in eye size will influence the radiation absorbed dose

delivered to non-targeted tissues within the eye during stereotactic radiosurgery of age-related macular degeneration (AMD) using the IRay™ treatment.

Methods: Stylized models of the eye were created with axial lengths of 20, 22, 24, 26, and 28mm. Each model was based upon the reference eye model from NCRP Report 130 and then scaled appropriately for each axial length. Models were incorporated with MCNPX radiation transport code in order to simulate the three beam IRay™ delivery system. Simulation results were assessed for both the mean absorbed dose and dose-volume histograms (DVH) for both target (macula) and non- targeted eye tissues, including the lens, retina, central retinal artery, and optic nerve.

Results: For each of the three beams, an average dose of 8Gy was delivered to the macula resulting in a total average dose of 24Gy for each eye model. The lens of the eye received a total average dose ranging from 146 to 189mGy, with the larger doses occurring in the smaller eye models since the beams traverse through the sciera closer to the limbus. The distal tip (1.5mm) of the central retinal artery received a total average dose ranging from 499 to 567mGy, with the larger doses occurring in the larger eye models due to increased scatter resulting from longer tissue path length to the nominal target. The optic nerve received a total average dose ranging from 207 to 225mGy, with the larger doses occurring in the smaller eye models.

Conclusions: The small variation in dose to the lens, central retinal artery, and optic nerve suggests that eye size does not significantly affect radiation dose to non-targeted eye tissues. This work was sponsored by Oraya Therapeutics.

PMID: 22756656 [PubMed - in process]

Med Phys. 2012 Jun;39(6):3798.

SU-E-T-408: Enhancing Stereotactic Radiosurgery for Neovascular Age-Related Macular Degeneration, Using Gold Nanoparticles.

Ngwa W, Makrigiorgos M, Berbeco R.

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Purpose: Age-related macular degeneration (AMD) is the leading cause of irreversible vision loss for people over the age of 60 in the United States. In this study the dosimetric feasibility of using gold nanoparticles (AuNP) as radiosensitizers to enhance stereotactic radiosurgery for neovascular AMD is investigated.

Methods: Analytic calculations were carried out to estimate the nucleus dose enhancement factor (nDEF) due to photon-induced photo- /Auger electrons from AuNP targeting neovascular AMD endothelial cells (EC). The nDEF represents the ratio of the dose to the nucleus with and without the presence of AuNP. As in previous studies, the EC is modeled as a slab of 2 μm (thickness) × 10 μm (length) × 10 μm (width) containing a nucleus of 5 μm diameter and thickness of 0.5 - 1 μm. The targeted AuNP are attached to the exterior of the EC. The nDEF was calculated for a range of feasible AuNP local concentrations (1-7 mg/g) using the clinically applicable 100 kVp x-rays employed by the IRayTM system (Oraya Therapeutics Inc. Newark, CA), with total filtration of 0.75 mm Al and 0.8 mm Be. For comparison the nDEF for other energies: 80 kVp, 90 kVp, 110 kVp, and 120 kVp was also investigated.

Results: For 100 kVp x-rays, the results revealed nDEF values of 1.30 - 3.26 for the investigated concentration range of 1 - 7 mg/g, respectively. In comparison, for the same concentration range, nDEF values of 1.32 - 3.40, 1.31-3.33, 1.29 - 3.19, 1.28 - 3.12 were calculated for 80 kVp, 90 kVp, 110 kVp, and 120 kVp x-rays, respectively.

Conclusions: The results predict substantial dose enhancement to the sensitive nucleus of neovascular endothelial cells, targeted by AuNP during kilovoltage stereotactic radiosurgery. This suggests that AuNP may be employed as radiosensitizers to enhance therapeutic efficacy during radiosurgery for neovascular AMD.

PMID: 22756587 [PubMed - in process]

Med Phys. 2012 Jun;39(6):3774.

SU-E-T-308: Dosimetry of a New Minimally Invasive Episcleral Brachytherapy Device.

Hamilton R, Cetas T, Gordon J, Lutz W, Marsteller L.

University of Arizona, Tucson, AZ.

Purpose: Describe the dosimetry of an episcleral brachytherapy device.

Methods: The SMD-I device is designed to treat exudative age-related macular degeneration (AMD) and employs a Sr-90/Y-90 source encapsulated in a stainless steel cylinder. The source is welded to a flexible wire allowing it to travel from a shielded vault in the SMD-I handle to the distal end of a curved cannula to deliver a therapeutic dose of radiation through the sclera to the neovascular target in the subchoroidal space. The SMD-I handle and vault are comprised of Ultem, a lightweight radiation tolerant plastic, which shields the surgeon. Dose calculations were performed using the MCNPX radiation transport code. The absolute dose rate was determined using radiochromic film (GAFChromatic© MD-55) at a point in solid water 2.0mm from the source center perpendicular to the cannula. Dose rates at several depths were measured using Kodak EDR2 film in water equivalent phantoms to compare with the absolute dose rate measurement and MCNPX calculations. The surgeon's hand dose received while manipulating the device with the source in the vault was measured using standard TL (thermoluminescence) finger ring dosimeters, TL ChipstratesTM, and calculated with MCNPX.

Results: The absolute dose rate 2.0mm from the source center is 0.45 Gy/min/mCi. The EDR2 film results agree with the absolute dose measurement and the MCNPX calculations. The dose rate decreases rapidly with depth so that the dose at the target depth (3mm) is approximately 8 times less than at 1mm depth (sclera). The dose distribution is sensitive to the angle between the cannula and the neovascular plane. Both TL methods yield a maximum dose rate of 6 μSv/min mCi to the surgeon's fingers consistent with the MCNPX calculation.

Conclusions: The SMD-I device permits accurate delivery of a therapeutic radiation dose for the treatment of exudative AMD. Russell J. Hamilton is a founder and currently serves on the Scientific Advisory Board of Salutaris Medical Devices, Inc. Wendell Lutz and Thomas Cetas serve on the Scientific Advisory Board of Salutaris Medical Devices, Inc. All authors have received financial support from Salutaris Medical Devices, Inc.

PMID: 22756487 [PubMed - in process]

Med Phys. 2012 Jun;39(6):3771-2.

SU-E-T-297: Proton-Therapy System for Treatment of Macular Degeneration and Ocular Malignancies.

Slopsema R, Mamalui-Hunter M, Yeung D, Li Z.

University of Florida, Jacksonville, FL.

Purpose: To commission a proton-therapy system for the treatment of uveal melanoma and age-related macular degeneration.

Methods: Proton therapy system is the proto-type of a commercial product developed by Ion Beam Applications. Proton beam is brought into the treatment room at 105 MeV through a fixed beam line. A single-scattering system with absorber/scattering foils spreads the beam into a Gaussian profile. A library of 10 range-modulator wheels and 16 range-modulator blocks generate spread-out Bragg peaks of various range and modulation width. Source-to-axis distance of the system is 169 cm. Two orthogonal digital x-ray panels are used for alignment. EyePlan software is used both for both treatment planning and in-room

alignment.

Results: Range can be varied continuously between 0.5 and 3.4 g/cm(2). Range accuracy is measured to be better than 0.05 g/cm(2). Modulation width can be varied in steps of =0.3 g/cm(2) with an accuracy of 0.05 g/cm(2) or 2%. Maximum aperture diameter is 2.5 cm and maximum dose rate >32 Gy/min. Strong dependence of output on range (7%/mm) and dose rate (0.2%/(Gy/min)) is found. Distal and lateral fall-off (80%-20%) are =0.23 and =0.18 g/cm(2) and do not depend much on range or depth. When reducing the aperture diameter to 6 mm no significant change is observed in shape of depth-dose curve or absolute dose (<2.5%). Measurements show a significant portion of the dose at shallow depth (=0.7 g/cm(2)) is delivered by protons scattering off of snout elements. Simple collimation could reduce this effect.

Conclusion: The dosimetric and positioning properties of the IBA ocular proton system are adequate to treat ocular lesions with acceptable clinical margins. Suggested improvements include limiting the output-dependence on range and reducing snout scatter.

PMID: 22756476 [PubMed - in process]

Pathogenesis

Int J Ophthalmol. 2012;5(2):125-32. Epub 2012 Apr 18.

Age-related maculopathy susceptibility 2 participates in the phagocytosis functions of the retinal pigment epithelium.

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AIM: Age-related macular degeneration (AMD) is a multifactorial disease and a prevalent cause of visual impairment in developed countries. Many studies suggest that age-related maculopathy susceptibility 2 (ARMS2) is a second major susceptibility gene for AMD. At present, there is no functional information on this gene. Therefore, the purpose of the present study was to detect the expression of ARMS2 in retinal pigment epithelium (RPE) cells and to investigate the effect of ARMS2 on the phagocytosis function of RPE cells.

METHODS: Immunofluorescence and reverse transcriptase PCR were used to demonstrate the presence and location of ARMS2 in ARPE-19 (human retinal pigment epithelial cell line, ATCC, catalog No.CRL-2302) cells. siRNA was used to knock down ARMS2 mRNA, and the effects of the knockdown on the phagocytosis function of the ARPE-19 cells were evaluated via Fluorescence Activated Cell Sorting (FACS).

RESULTS: ARMS2 was present in ARPE-19 cells, localized in the cytosol of the perinuclear region. The expression of ARMS2 mRNA (messenger RNA) in ARPE-19 cells transfected with ARMS2-siRNA (small interfering RNA, 0.73±0.08) was decreased compared with normal cells (1.00±0.00) or with cells transfected with scrambled siRNA (0.95±0.13) (P<0.05). After incubation of RPE cells with a latex beads medium for 12, 18, or 24 hours, the fluorescence intensities were 38.04±1.02, 68.92±0.92, and 78.00±0.12 in the ARMS2-siRNA-transfected groups, respectively, and 77.98±5.43, 94.87±0.60, and 98.30±0.11 in the scrambled siRNA-transfected groups, respectively. The fluorescent intensities of the same time points in the two groups were compared using Student's t-test, and the p values were all less than 0.001 at the three different time points.

CONCLUSION: There is endogenous expression of ARMS2 in ARPE-19 cells. ARMS2 plays a role in the phagocytosis function of RPE cells, and this role may be one of the mechanisms that participates in the development of AMD.

PMID: 22762035 [PubMed - in process] PMCID: PMC3359023

Invest Ophthalmol Vis Sci. 2012 Jul 3. [Epub ahead of print]

Effects of proinflammatory cytokines on the claudin-19 rich tight junctions of human retinal pigment epithelium (RPE).

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Purpose: Chronic, subclinical inflammation contributes to the pathogenesis of several ocular diseases including age-related macular degeneration. Proinflammatory cytokines affect tight junctions in epithelia that lack claudin-19, but in the retinal pigment epithelium claudin-19 predominates. This study examines the effects of cytokines on the tight junctions of human fetal RPE (hfRPE).

Methods: hfRPE was incubated with interleukin 1-beta (IL-1β), interferon-gamma (IFNγ), or tumor necrosis factor-alpha (TNFα), alone or in combination. Permeability and selectivity of the tight junctions were assessed using non-ionic tracers and electrophysiology. Claudins, occludin, and ZO-1 were examined using the polymerase-chain-reaction, immunoblotting, and confocal immunofluorescence microscopy.

Results: Only TNFα consistently lowered TER >80%. A serum-free medium revealed two effects of TNFα: 1) decreased TER was only observed when TNFα was added to the apical side of the monolayer; 2) expression of TNFα receptors and inhibitors of apoptosis were induced from either side of the monolayer. In untreated cultures, tight junctions were slightly cation selective, and this was minimally affected by TNFα. The results were unexplained by effects on claudin-2, claudin-3, claudin-19, occludin, and ZO-1, but changes in the morphology of the junctions and actin cytoskeleton may have a role.

Conclusions: Claudin-19 rich tight junctions have low permeability for ionic and non-ionic solutes and are slightly cation-selective. Claudin-19 is not a direct target of TNFα. TNFα may protect RPE from apoptosis, but makes the monolayer leaky when it is presented to the apical side of the monolayer. Unlike other epithelia, IFNγ failed to augment the effect of TNFα on tight junctions.

PMID: 22761260 [PubMed - as supplied by publisher]

Genetics

Int J Ophthalmol. 2012;5(2):242-6. Epub 2012 Apr 18.

Association between complement factor H Y402H polymorphisms and age-related macular degeneration in Chinese: Systematic review and meta-analysis.

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AIM: Age-related macular degeneration (AMD) is the leading cause of blindness in the developed world and complement factor H (CFH) polymorphism has been found to associate with the AMD. To investigate whether the Y402H variant in CFH is associated with AMD in Chinese populations, a systematic review and meta-analysis were performed to estimate the magnitude of the gene effect and the possible mode of action.

METHODS: A meta-analysis was performed using data available from ten case-control studies assessing association between the CFH Y402H polymorphism and AMD in Chinese populations involving 1538 AMD. Data extraction and study quality assessment were performed in duplicate. Summary odds ratios (ORs) and 95% confidence intervals (CIs) an allele contrast and genotype contrast were estimated using fixed-effects models. The Q-statistic test was used to assess heterogeneity, and Funnel plot was used to

evaluate publication bias.

RESULTS: Seven of ten case-control studies were neovascular AMD, and few studies came from west and north of China. There was strong evidence for association between CFH and AMD in Chinese population, with those having risk allele C 2.35 times more likely to have AMD than subjects with T allele. Evidence of publication bias was not observed in our meta-analysis.

CONCLUTION: This meta-analysis summarizes the strong evidence for an association between CFH and AMD in Chinese and indicates each C allele increasing the odds of AMD by 2.33-fold.But more evidences about the relation between CFH polymorphism and different type of Chinese AMD from various district were needed.

PMID: 22762059 [PubMed - in process] PMCID: PMC3359047