Evidence Table 1. Systematic review evidence I

| **Study** | **KQs** | **Aims of the study** | **Conclusions** | **Types of participants** | | | | | **Types of interventions** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **OAG** | **OHT** | **ACG** | **NTG** | **Other** |  |
| Aptel  20081 | 3,6 | “This systematic meta-analysis was performed to evaluate the intraocular pressure (IOP) lowering effects and tolerability of latanoprost, bimatoprost, and travoprost." | “The findings suggest a greater efficacy of bimatoprost compared with latanoprost and travoprost, although the incidence of hyperemia was lower with the latter 2 agents. | Y | Y | N | N | POAG or OHT in at least 90% of trial participants | Latanoprost, travopost, or brimatoprost monotherapy |
| Burr  20042 | 1,2,3,4,6 | "To study the relative efficacy of medical and surgical treatment for OAG in terms of measures of glaucoma progression and adverse effects of treatment." | "Evidence from one trial suggests, for mild OAG, that VF deterioration up to five-years is not significantly different whether treatment is initiated with medication or trabeculectomy. Reduced vision, cataract and eye discomfort are more likely with trabeculectomy. There is some evidence, for more severe OAG, that initial medication (pilocarpine, now rarely used as first line medication) is associated with greater VF deterioration than surgery. In general, surgery lowers IOP more than medication." | Y | N | N | N |  | IOP lowering meds compared with trabeculectomy w/ or w/o use of anti-scarring agents; non-penetrating trabeculectomy w/ or w/o use of antiscarring agents; any other antiglaucomatous surgery |
| Chai  20103 | 3,6 | Compare the efficacy and safety profile of viscocanalostomy | "Trabeculectomy was found to have a greater pressure lowering effect compared with viscocanalostomy. However, viscocanalostomy had a significantly better risk profile." | NR | NR | NR | NR | 1.7% of participants with primary chronic angle closure glaucoma | Viscocanalostomy versus trabeculectomy |
| Cheng 20084 | 3,6 | "To evaluate the efficacy and tolerability of bimatoprost compared with latanoprost in reducing intraocular pressure." | "Bimatoprost was associated with significantly greater efficacy in lowering morning IOP than latanoprost at all time points. Comparable proportions of patients reached the IOP target with bimatoprost and latanoprost. Both agents were well tolerated, although bimatoprost was associated with a significantly greater frequency of conjunctival hyperemia than latanoprost." | NR | Y | NR | NR | Glaucoma | Bimatoprost versus latanoprost |
| Cheng 20095 | 3,6 | "The aim of this study was to evaluate the effi cacy and tolerability of latanoprost, compared with the combination of dorzolamide and timolol, in the treatment of patients with elevated intraocular pressure." | "Latanoprost was associated with significantly greater effi cacy in lowering diurnal mean IOP than combined dorzolamide and timolol in patients with IOP insuffi ciently controlled by timolol alone, and latanoprost was as effective as combined dorzolamide and timolol in patients without baseline timolol treatment. The combination of dorzolamide and timolol was less tolerated than latanoprost." | Y | Y | Y | N | Pigmentary, mixed glaucoma as well as 1 trial with chronic angle closure glaucoma participants | Latanoprost versus combined dorzolaminde and timolol (concomitant administration or fixed combination) |
| Cheng 20106 | 3,6 | "To evaluate the efficacy and tolerability of nonpenetrating filtering surgery in the treatment of patients with open-angle glaucoma." | "Viscocanalostomy and deep sclerectomy were less effective than trabeculectomy in the treatment of open angle glaucoma, and deep sclerectomy plus mitomycin C (MMC) was also less effective than trabeculectomy plus MMC. However, viscocanalostomy and deep sclerectomy were associated with fewer complications than trabeculectomy." | Y | N | N | N |  | Viscocanalostomy versus trabeculectomy with or without antimetabolite; deep sclerectomy versus trabeculectomy with or without mitomycin C |
| Cox 20087 | 3,6 | "To evaluate the efficacy of the fixed combination ocular hypotensive therapies compared with their nonfixed components used concomitantly for lowering intraocular pressure in glaucoma and ocular hypertension." | "Fixed combination therapies are equally safe and effective at lowering IOP as their non-fixed components administered concomitantly." | NR | Y | NR | NR | Glaucoma | Fixed combination medications compared with non-fixed components used (concomitant) (travoprost, brimonidine, dorzolamide, bimatoprost) and a beta blocker |
| Eyawo 20098 | 3,6 | "To identify randomized trials evaluating the head-to-head effectiveness of prostaglandin analogs in the treatment of POAG and ocular hypertension and to conduct a meta-analysis of their results to improve understanding of the drugs’ relative efficacy." | "Randomized head-to-head evaluations of prostaglandin therapy demonstrate similar efficacy effects, but differing hyperemia effects." | Y | Y | N | N | Other types of chronic open angle glaucoma | Travoprost versus latanoprost or bimatoprost; latanoprost versus bimatoprost |
| Fung 20079 | 3,6 | "To compare the efficacy and tolerability of latanoprost versus brimonidine in the treatment of open angle glaucoma, ocular hypertension or normal-tension glaucoma." | "Latanoprost is more effective than brimonidine as monotherapy in lowering IOP. Brimonidine is associated with a higher rate of fatigue." | Y | Y | N | Y | Mixed glaucoma | Latanoprost versus brimonidine |
| Hodge 200810 | 3,6 | "To systematically review the literature on the efficacy and harm of prostaglandin analogues compared to brimonidine and dorzolamide in treating elevated intraocular pressure." | "Latanoprost was found to be significantly superior to dorzolamide but not brimonidine. However, ocular adverse events were significantly fewer in latanoprost users than in brimonide users. Neither travoprost nor bimatoprost was compared to dorzolamide or brimonidine in the present literature." | N | Y | N | N |  | Latanoprost versus dorzolamide and brimonidine |
| Honrubia 200911 | 6 | "To conduct a meta-analysis of randomised clinical trials to evaluate the development of conjunctival hyperaemia after the use of latanoprost versus travoprost and bimatoprost, in patients with ocular hypertension or glaucoma." | "According to available data, the use of latanoprost is associated with a lower incidence of conjunctival hyperaemia when compared with travoprost and bimatoprost in the treatment of patients with ocular hypertension or glaucoma." | NR | Y | NR | NR | Glaucoma | Latanoprost versus travoprost and bimatoprost |
| Jampel 200312 | 3,4,6 | "The objectives of this evidence report were to: identify the most important questions pertinent to treatment of patients with coexisting cataract and glaucoma; assess the published literature with respect to quality and content regarding these questions; and to inform clinical practitioners and identify areas where future research is needed, based on the literature findings" | "The literature does not point to one optimal strategy for controlling IOP in patients with coexisting cataract and glaucoma needing surgery. Therefore, there is a continued need for high quality studies with greater duration and more information on optic nerve and visual field findings." | Y | N | Y | N | OAG or ACG with coexisting cataract | Laser treatment, filtration surgery, endoscopic cyclophotocoagulation, nonpenetrating surgeries. Clear corneal and scleral cataract incision and nuclear expression/phacoemulsification |
| Kirwan 200913 | 3,6 | "To assess the effectiveness of beta radiation during glaucoma surgery (trabeculectomy)." | "Trabeculectomy with beta irradiation has a lower risk of surgical failure compared to trabeculectomy alone. A trial of beta irradiation versus anti-metabolite is warranted." | Y | Y | Y | Y | 1st surgical procedure; no simultaneous bilateral surgery; all types of glaucoma included in review inclusion criteria, but included studies enrolled participants with OAG |  |
| Li 200614 | 3,6 | "To evaluate the incidence of reported side-effects and intraocular pressure-lowering effect of travoprost versus other prostaglandin analogues (latanaprost, bimatoprost, unoprostone) or timolol." | "Travoprost is more effective than timolol in lowering IOP in patients with openangle glaucoma or ocular hypertension. Compared with other prostaglandin analogues, travoprost appears to be equivalent to bimatoprost and latanoprost. Although a limited number of local side-effects were reported, no serious treatment-related side-effects were reported." | Y | Y | N | N |  | Travoprost compared with other prostagladin analogs or timolol |
| Liu 201015 | 1,3,6 | "This meta-analysis evaluated the efficacy and tolerability of one-site versus two-site phacotrabeculectomy in the treatment of patients with coexisting cataract and glaucoma." | "Two-site phacotrabeculectomy is superior to one-site phacotrabeculectomy in reducing IOP, but other post-operative effects are similar. One-site and two-site phacotrabeculectomies have similar adverse event rates." | NR | NR | NR | NR | Coexisting cataract and glaucoma | Phacotrabeculectomy (1 site versus 2 site) |
| Loon 200816 | 3,6 | "To compare the efficacy and tolerability of timolol versus brimonidine in the treatment of glaucoma." | "Both drugs are effective in lowering IOP. Brimonidine is associated with a higher rate of allergy." | Y | Y | NR | NR | Other glaucoma (2%) | Timolol versus brimonidine |
| Maier 200517 | 4 | "To summarize the evidence of the effectiveness of introacular pressure lowering treatment to 1) delay OAG among those with OHT ocular hypertension 2) delay progression of OAG" | "Lowering intraocular pressure in patients with ocular hypertension or manifest glaucoma is beneficial in reducing the risk of visual field loss in the long term." | Y | Y | N | Y |  | Medical and/or surgical treatment (timolol, betaxolol, various medications, laser trabeculoplasty, betaxolol, and latanoprost versus concurrent untreated control group (Includes OHTS, EMGT, CNGTS) |
| Minckler 200618 | 1,3,6 | "This review compares aqueous shunts for IOP control and safety." | "Relatively few randomized trials have been published on aqueous shunts and methodology and data quality among them is poor. To date there is no evidence of superiority of one shunt over another." | Y | NR | Y | NR | Glaucoma patients irrespective of lens status; %OAG unknown | Aqueous shunts versus standard surgery or cyclodestruction |
| Rolim de Moura 200719 | 2,3,4,6 | "To study the effects of laser trabeculoplasty for OAG" | "Evidence suggests that, in people with newly diagnosed OAG, the risk of uncontrolled IOP is higher in people treated with medication used before the 1990s when compared to laser trabeculoplasty at two years followup.Trabeculoplasty is less effective than trabeculectomy in controlling IOP at six months and two years follow up. Different laser technology and protocol modalities were compared to the traditional laser trabeculoplasty and more evidence is necessary to determine if they are equivalent or not. There is no evidence to determine the effectiveness of laser trabeculoplasty compared to contemporary medication (prostaglandin analogues, topical anhydrase inhibitors and alpha2-agonists) and also with contemporary surgical techniques." | Y | N | N | N |  | Argon laser trabeculoplasty versus medication, trabeculectomy, diode laser trabeculoplasty or ND: Yag laser; Laser trabeculoplasty, betaxolol, and latanoprost versus observation for POAG or NTG (Includes EMGT) |
| Vass 200720 | 4,6 | "To assess and compare the effectiveness of topical pharmacological treatment for POAG or OHT to prevent progression or onset of glaucomatous optic neuropathy." | "The results of this review support the current practice of IOP lowering treatment of OHT. A visual field protective effect has been clearly demonstrated for medical IOP lowering treatment. Positive but weak evidence for a beneficial effect of the class of beta-blockers has been shown. Direct comparisons of prostaglandins or brimonidine to placebo are not available and the comparison of dorzolamide to placebo failed to demonstrate a protective effect. However, absence of data or failure to prove effectiveness should not be interpreted as proof of absence of any effect. The decision to treat a patient or not, as well as the decision regarding the drug with which to start treatment, should remain individualised, taking in to account the amount of damage, the level of IOP, age and other patient characteristics." | Y | Y | N | N |  | Topical medications versus placebo or untreated control group; head to head comparisons of medications; unspecified medications versus untreated control group (Includes OHTS) |
| Wilkins 200521 | 3,6 | "To assess the effects of intraoperative mitomycin C compared to placebo in trabeculectomy." | "Intraoperative mitomycin C reduces the risk of surgical failure in eyes that have undergone no previous surgery and in eyes at high risk of failure. Compared to placebo it reduces mean IOP at 12 months in all groups of participants in this review. Apart from an increase in cataract formation following MMC, there was insufficient power to detect any increase in other serious side effects such as endophthalmitis." | NR | NR | NR | NR | Glaucoma; Two included studies enrolled participants with ACG; Unsure if two additional included studies enrolled ACG participants | Intraoperative mitomycin C versus placebo or control |
| Wormald 200122 | 3,6 | "To assess the effects of postoperative injections of 5-FU in eyes of people undergoing surgery for glaucoma." | "Postoperative injections of 5-FU are now rarely used as a planned series but are increasingly used on an ad hoc basis. This presumably reflects an aspect of the treatment that is unacceptable to both patients and doctors. None of the trials reported on the participants’ perspective of care which constitutes a serious omission for an invasive treatment such as this." | NR | NR | NR | NR | People undergoing glaucoma surgery (high risk of failure, combined glaucoma and cataract surgery, and primary trabeculectomy; At least one included study enrolled participants with ACG | Post-operative injection of 5-FU (any dose) versus placebo or no injection |
| Zhang 200123 | 3,6 | "To evaluate the comparative efficacy and tolerance of latanoprost versus timolol through a meta-analysis of randomised controlled trials." | "This meta-analysis suggests that latanoprost is more effective than timolol in lowering IOP. However, it often causes iris pigmentation. While current evidence suggests that this pigmentation is benign, careful lifetime evaluation of patients is still justified." | Y | Y | N | N |  | Latanoprost versus timolol |