Comparison of the Efficacy and Safety of Non-Steroidal Anti-Inflammatory Drugs and Corticosteroid Drugs for Prevention of Cystoid Macular Edema After Cataract Surgery: A Systematic Review and Network Meta-Analysis

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Abstract

Introduction:

To compare the efficacy and safety of non-steroidal anti-inflammatory drugs (NSAID), corticosteroid (CS), and a combination of both drugs to prevent cystoid macular edema (CME) after cataract surgery.

Methods

We searched Pubmed, Cochrane Library, and Embase electronic databases to assess the relevant randomized controlled trials (RCTs) up to 28 April 2021. Network meta-analysis was registered on PROSPERO (CRD42020182520).

Results

Twenty-four RCTs were included in this review. The NSAID and combination of both drugs were significantly reduced the risk of developing CME than CS alone in non-diabetics and mix population. In the ranking profiles, the combination therapy showed a significant advantage over the single drugs and was less likely to develop CME. Diclofenac was the most likely to reduce the odds of developing CME compared with bromfenac and nepafenac. Dexamethasone was the most likely to reduce the odds of developing CME compared with betamethasone and fluorometholone.

Conclusion

NSAID combination with CS has significantly reduced the risk of developing CME postoperatively than the single drug. Diclofenac was superior to bromfenac and nepafenac in preventing CME. Dexamethasone was superior to betamethasone and fluorometholone in preventing CME.

Introduction

The cataract is the leading global cause of visual impairment, and cataract surgery is one of the most commonly performed operations in the world [1]. Even though phacoemulsification has significantly decreased the incidence of complications, cystoid macular edema (CME), known as Irvine-Gass syndrome [2], is one of the most common complications after cataract surgery [3]. CME is characterized by fluid accumulation due to leakage from capillaries in the central retina [4]. CME usually occurs within 3 months after surgery, and a peak incidence at 4 to 6 weeks [5]. The previous study showed an incidence of angiographic CME in up to 30% of nondiabetics without complicated cataract surgery [6, 7]. However, diabetics have a higher risk of developing CME postoperatively in up to 56% [8]. There is a significant morbidity of CME which can lead to permanent visual impairment.

Rossetti and colleagues performed a meta-analysis in 1998 and reported anti-inflammatory treatments were effective in reducing the odds of CME postoperatively [9]. Since then, many researchers have used corticosteroid (CS) and/or non-steroidal anti-inflammatory drugs (NSAID) to prevent CME. NSAID is a kind of anti-inflammatory drugs and effective to prevent the odds of CME postoperatively [10]. Two previous pairwise meta-analyses showed that NSAID reduced the risk of developing CME [11, 12]. However, the treatment protocol of the prevention of developing CME has shown some controversy with a lack of clear evidence on a clinical decision [13]. Some recent studies recommended the use of a combination of CS and NSAID had a lower risk of developing CME than a single drug [14, 15].

This network meta-analysis (NMA) was assessed randomized controlled trials (RCTs) to compare the efficacy and safety of NSAID, CS, and combination treatments to prevent CME. We further investigate the efficacy of various NSAID and CS to prevent CME postoperatively. This review synthesized direct and indirect comparisons to summary the best available treatments.

Methods

We performed this meta-analysis by the guideline of the Preferred Reporting Items for Systematic Reviews (PRISMA) [16]. The network meta-analysis was registered on PROSPERO (CRD42020182520).

Search methods

We searched Pubmed, Cochrane Library, and Embase electronic databases to assess the relevant articles up to 28 April 2021, by using the items: (Cataract Surgery or Cataract Extraction or Lens Implantation or Phacoemulsification) and (macular edema or edema or Irvine gass).

Additionally, two reviewers (SSL and RY) conducted the Internet-based search for eligibility independently. There were no language limitations. Discrepancies among authors were resolved by discussion.

Study selection

We included the relevant articles that met the criteria: (1) randomized controlled trials; (2) the studies included participants underwent cataract extraction with posterior chamber intraocular lens implantations and received anti-inflammatory treatments after surgery; (3) the results of the incidence of CME or adverse events was included in the study. We excluded the relevant articles that met the exclusion criteria: the studies including participants with preoperative CME or a high risk of developing CME after cataract surgery.

Data extraction and Quality Assessment

All data were extracted by two investigators (SSL and HHW) independently. Extracted data consisted of the name of the first author, publication year, location, study sample, the age of participants, drugs of interventions, follow-up time, the incidence of macular edema, and adverse events.

The risk of bias of included articles was assessed by two authors (HHW and SSL) using the Cochrane Collaboration’s Tool, assessing the following items: random sequence generation, allocation concealment, blinding of participants and personnel, blinding of outcome reporting, and other bias. For each item was scored as "low bias", "high bias", or "unclear of bias". The authors of articles that did not report important outcomes were contacted.

Statistical Analysis

Methods for direct treatment comparisons

We performed head-to-head (direct) comparisons using relative risk (RR) with 95% confidence intervals (CIs) to determine the effect sizes. I^2 statistic value was used to assess heterogeneity.

Methods for indirect and mixed comparisons

The NMA was based on a random-effects model in a frequentist framework. We reported RR with 95% CIs for indirect and mixed comparisons [17]. We performed comparison-adjusted funnel plots to assess publication bias. The NMA ranked the treatments to provide clinical decisions using surface under the cumulative ranking (SUCRA) probabilities. We used STATA 15.1 for all data analyses (pairwise and NMA, I^2 measure, SUCRA graphs, and funnel plot).

Result

We searched PubMed, Cochrane Library, and Embase databases for relevant randomized controlled trials (RCTs). We identified 12648 studies. After records of duplicates and not relevant were removed, fifty-five full papers were assessed. Thirty-one studies were excluded because of duplicate data, incorrect comparators, and incorrect outcomes. Finally, 24 RCTs were included in this review (Fig. 1).

Baseline characteristics of included patients are summarized in table 1. Twenty-four RCTs (including 5130 patients) were published between 1997 and 2018. Seventeen trials enrolled in non-diabetic patients. Four trials included only diabetic patients. Three trials included mixed patients. The follow-up time of the studies varied from 4 weeks to 140 days. In our NMA, the NSAID included ketorolac, bromfenac, nepafenac, diclofenac, and indomethacin, the CS included prednisolone, betamethasone, fluorometholone, and dexamethasone.

Table 1 Characteristics of trials included in the network meta-analysis

Study	Location	Sample	Age	Interventions	Drugs	Follow-up	Patients
Almeida 2008[18]	Canada	53:53	71(45-92)	Steroid+NSAID VS Steroid	Prednisolone 1% (postop) + Ketorolac 0.5% (preop + postop) VS Prednisolone 1% (postop)	4 W	mix (diabetes, glaucoma, macular disease, Pseudoexfoliation syndrome, hypertension)
Asano 2008[19]	Japan	69:69	66	NSAID VS Steroid	diclofenac 0.1% VS betamethasone 0.1% (postop)	8 W	low risk (uveitis and diabetes were excluded)
Campa 2018[15]	Italy	48:48:48	78.21±7.87; 77±5.93; 78.75±7.96	Steroid+ NSAID VS Steroid	nepafenac 0.1% (preop + postop) + dexamethasone 1.32 mg (postop) VS bromfenac (preop + postop) + dexamethasone 1.32 mg (postop) VS dexamethasone 1.32 mg (postop)	5 W	low risk (diabetic retinopathy and retinal vein occlusion were excluded)
Cervantes-Coste 2009[20]	Mexico	30:30	72.6±10.5; 71.2±8.8	Steroid+ NSAID VS Steroid	nepafenac 0.1% (preop + postop) + dexamethasone (postop) VS dexamethasone (postop)	6 W	mix (including diabetics and other patients)
Chatziralli 2011[21]	Greece	70:68	74.3±7.3; 74.0±7.6	Steroid+ NSAID VS Steroid	ketorolac tromethamine 0.5% (preop + postop) + dexamethasone 0.1% (preop + postop) VS dexamethasone 0.1% (preop + postop)	6 W	mix (diabetes, glaucoma, macular disease, Pseudoexfoliation syndrome, hypertension)
Donnenfeld 2006[22]	USA	75:25	73	Steroid+ NSAID VS Steroid	Prednisolone 1% (postop) + Ketorolac 0.4% (preop + postop) VS Prednisolone 1% (postop)	12 W	low risk (uveitis and diabetes were excluded)
Elsawy 2013[23]	Egypt	35:35	NR	Steroid+ NSAID VS Steroid	ketorolac tromethamine 0.4% + dexamethasone 0.1% VS dexamethasone 0.1% (postop)	12 W	diabetes
Italian Diclofenac Study Group 1997[24]	Italy	121:108	68.3±7.4; 67.5±7.7	NSAID VS Steroid	diclofenac 0.1% (postop) VS dexamethasone 0.1% (postop)	140 D	low risk (a senile cataract without vitreoretinal pathology)
Miyake 1999[25]	Japan	36:37	68.2±7.2 69.9±8.2	NSAID VS Steroid	Diclofenac 0.1% VS Fluometholone 0.1% (preop + postop)	5 W	glaucoma
Miyanaga 2009[26]	Japan	25:24:23	74 (48-86); 71 (46-86); 70 (41-83)	NSAID VS Steroid+ NSAID VS Steroid	Bromfenac 0.1% VS Betamethasone 0.1% and Fluometholone 0.1% + Bromfenac 0.1% VS Betamethasone 0.1% and Fluometholone 0.1% (postop)	8 W	low risk (uveitis and diabetes were excluded)
Miyake 2007[27]	Japan	25:25	65.4±7; 65.8±7.1	NSAID VS Steroid	diclofenac 0.1% (postop) VS fluorometholone 0.1% (postop)	5 W	low risk (uveitis and diabetes were excluded)
Miyake 2011[28]	Japan	28:27	64.3±7.8; 65.7±12.2	NSAID VS Steroid	nepafenac 0.1% (preop + postop) VS fluorometholone 0.1% (preop + postop)	5 W	mix (without diabetes retinopathy, glaucoma, macular disease, Pseudoexfoliation syndrome)

Moschos 2012[29]	Greece	38:41	76.68±10.72; 76.71±8.82	Steroid+ NSAID VS Steroid	Dexamethasone 0.1% (postop) + Diclofenac 0.1% (preop + postop) VS Dexamethasone 0.1% (postop)	4 W	low risk (uveitis and diabetes were excluded)
Pollack 2017[30]	multicentre	87:88	68.1±8.6; 69.4±7.6	Steroid+ NSAID VS Steroid	nepafenac 0.1% (preop + postop) + dexamethasone 0.1% (postop) VS dexamethasone 0.1% (postop)	3 M	diabetes
Rossetti 1996[31]	Italy	42:46	74.2±8.8; 72.9±9.4	Steroid+ NSAID VS Steroid	diclofenac sodium (preop + postop) + dexamethasone (postop) VS dexamethasone (postop)	6 M	low risk (maculopathy and diabetes were excluded)
Singh 2012[32]	USA	125:126	66.6±9.3; 66.4±9.7	Steroid+ NSAID VS Steroid	nepafenac 1% (preop + postop) + prednisolone acetate (postop) VS prednisolone acetate (postop)	3 M	diabetes
Singh 2017[33]	multicentre	587:593	67.2±8.5; 67.4±8.3	Steroid+ NSAID VS Steroid	nepafenac 0.3% (preop + postop) + prednisolone acetate (postop) VS prednisolone acetate (postop)	3 M	diabetes
Ticly 2014[34]	Brazil	37:44	67.1±10.8; 66.1±8.7	Steroid+ NSAID VS Steroid	Prednisolone 1% + Ketorolac 0.4% VS Prednisolone 1% (preop + postop)	5 W	low risk (uveitis and diabetes were excluded)
Tzelikis 2018[35]	Brazil	112:112	68.32±9.08	Steroid+ NSAID VS Steroid	nepafenac 0.3% + prednisolone 1.0% VS prednisolone 1.0% (preop + postop)	12 W	low risk (uveitis and diabetes were excluded)
Wang 2013[36]	China	83:84	73.37±9.17	Steroid+ NSAID VS Steroid	Prednisolone 15 mg + Bromfenac 0.1% VS Prednisolone 15 mg + Fluometholone 0.1% or Dexamethasone 0.1% (postop)	8 W	age-related cataract without any other ocular diseases
Wielders 2018[14]	European	270:265:265	69.70±8.94 71.23±8.73 70.41±8.91	NSAID VS Steroid VS NSAID+Steroid	bromfenac 0.09% VS dexamethasone 0.1% VS dexamethasone 0.1% + bromfenac 0.09% (preop + postop)	12 W	nondiabetics
Wittpenn 2008[37]	USA	268:278	70:70	Steroid+ NSAID VS Steroid	ketorolac 0.4% (preop + postop) + prednisolone acetate 1% (postop) VS prednisolone acetate 1% (postop)	4 W	low risk (without maculopathy and retinal-vascular anomalies)
Yavas 2007[38]	Turkey	121:58	64; 65	Steroid+ NSAID VS Steroid	Prednisolone 1% (postop) + Indomethacin 0.1% (postop or preop + postop) VS Prednisolone 1% (postop)	4 W	low risk (hypertension and diabetes were excluded)
Zaczek 2014[39]	Sweden	75:77	70.4±7.4; 68.3±7.5	Steroid+ NSAID VS Steroid	nepafenac 0.1% + dexamethasone 0.1% (preop + postop) VS dexamethasone 0.1% (postop)	4 W	low risk (uveitis and diabetes were excluded)

W. Weeks, M. Months, D. days, NSAID: inflammatory drugs

Quality of evidence

We included RCTs in this NMA. There was an assessment of the risk of bias within RCTs in Figure 2. The majority of studies were marked as "unclear" for selection bias because they did not report sufficient information associated to judge selection bias. Eleven RCTs were open-label non-masked studies and marked as "high risk" for performance bias. Eight RCTs were marked as "low risk" for performance bias. We judged nine studies as "high risk" and ten studies as "low risk" in terms of detection bias. Two studies were assigned a "high risk" of bias for attrition bias. Only one trial was marked as a "high risk" of bias for incomplete data. The quality of evidence of included RCTs was low to moderate (Fig. 2).

Pairwise and network meta-analyses

This NMA included 24 relevant studies, which compared the incidence of CME with NSAID, CS, and combination therapy after cataract surgery. The main findings of pairwise and network meta-analyses were presented in table 2. Sixteen studies reported the incidence of CME in non-diabetics. The results of pairwise and network meta-analysis showed NSAID and combination of both drugs were significantly superior to the CS alone in non-diabetics (RR 0.33, 95% CI 0.23 to 0.48; RR 0.24, 95% CI 0.14 to 0.40; RR 0.23, 95% CI 0.14 to 0.37; RR 0.19, 95% CI 0.11 to 0.33). There were only four studies compared to CS with combination therapy in terms of the incidence of CME in diabetics. The result of pairwise comparisons showed combination therapy significantly reduced the risk of developing CME after cataract surgery (RR 0.25, 95% CI 0.17 to 0.36). Twenty-four studies including diabetics and non-diabetics (mixed populations) reported NSAID and combination therapy significantly reduced the risk of developing CME after cataract surgery than CS in both pairwise and network meta-analysis (RR 0.30, 95% CI 0.22 to 0.43; RR 0.34, 95% CI 0.27 to 0.41; RR 0.20 95% CI 0.12 to 0.34; RR 0.21, 95% CI 0.15 to 0.30). There were six studies reported the results of adverse events, which included mild pain, dry eyes, keratitis, and posterior vitreous detachment. The result of pairwise comparisons showed that the combination of NSAID and CS significantly reduced the risk of developing adverse events than CS (RR 0.77, 95% CI 0.63, 0.94).

Table 2 Summary of main findings of pairwise and network meta-analyses

Parameters	Direct pairwise meta-analysis			Network meta-analysis	
	No. of samples	RR (95% CI)	P	Heterogeneity I^2	RR (95% CI)
CME with Non-diabetics					
NSAID VS CS	1077	0.33 (0.23, 0.48)	0.528	0.0%	0.24 (0.14, 0.40)
NSAID VS NSAID+CS	584	1.81 (0.68, 4.83)	-	-	1.25 (0.62, 2.55)
NSAID+CS VS CS	2295	0.23 (0.14, 0.37)	0.913	0.0%	0.19 (0.11, 0.33)
CME with Diabetics					
NSAID+CS VS CS	1692	0.25 (0.17, 0.36)	0.957	0.0%	-
CME with Mixed Populations					
NSAID VS CS	1132	0.30 (0.22, 0.43)	0.455	0.0%	0.20 (0.12, 0.34)
NSAID VS NSAID+CS	584	1.81 (0.68, 4.83)	-	-	0.98 (0.55, 1.74)
NSAID+CS VS CS	4968	0.34 (0.27, 0.41)	0.549	0.0%	0.21 (0.15, 0.30)
Adverse Events					
NSAID VS CS	539	0.87 (0.71, 1.06)	-	-	0.89 (0.65, 1.22)
NSAID VS NSAID+CS	535	1.20 (0.95, 1.50)	-	-	1.15 (0.85, 1.57)
NSAID+CS VS CS	2760	0.77 (0.63, 0.94)	0.72	0.0%	0.77 (0.47, 1.27)

CS: corticosteroid, NSAID: non-steroidal anti-inflammatory drugs, CI: confidence interval, CME: cystoid macular edema, RR: relative risk

Rank probabilities

The SUCRA ranking profiles of comparable treatments (NSAID, CS, a combination of both drugs) in non-diabetics and mixed populations. The treatment with the largest cumulative was more likely to develop CME after cataract surgery. The combination therapy showed a significant advantage over the single drugs and the less likely to develop CME (Fig. 3).

Network meta-analysis of the efficacy of various NSAID and CS

Network plot (Fig. 4. a), network meta-analysis (Fig. 4. b), and SUCRA ranking (Fig. 4. c) were assessed in terms of the incidence of CME. The Figure 4-a showed a network plot of comparisons on different outcomes of treatment incidence of CME after cataract surgery. The Figure 4-b showed the results of pooled estimates of the network meta-analysis. Diclofenac was significantly reduced the risk of developing CME than betamethasone (RR 0.32, 95% CI 0.19 to 0.54). Bromfenac was significantly reduced the risk of developing CME than dexamethasone and fluorometholone (RR 2.11, 95% CI 1.07 to 4.19; RR 6.17, 95% CI 1.15 to 33.1). Diclofenac and nepafenac showed a significant advantage over the fluorometholone (RR 7.78, 95% CI 2.50 to 24.83; RR 0.18, 95% CI 0.07 to 0.44). The Figure 4-c showed the results of the SUCRA score of each treatment. In terms of efficacy of NSAIDs, diclofenac was the most likely to reduce the odds of developing CME compared with bromfenac and nepafenac. In terms of efficacy of CS, dexamethasone was the most likely to reduce the odds of developing CME compared with betamethasone and fluorometholone.

Funnel plots

The funnel plots for the odds of developing CME after cataract surgery were presented in Figure 5. The comparison-funnel plots were symmetrical and did not reveal any obvious publication bias.

Inconsistency assessment

The results of the inconsistency test were shown in figure 6. For direct and indirect estimates, the results of the loop included 0 according to the three forest plots. Therefore, the reports of inconsistency assessment were robust.

Rank probabilities

Fig. 3 showed SUCRA ranking profiles of comparable treatments (NSAID, CS, a combination of both drugs) in non-diabetics and mixed populations. The treatment with the largest cumulative was more likely to develop CME after cataract surgery. The combination therapy showed a significant advantage over the single drugs and the less likely to develop CME.

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Discussion

This systematic review and network meta-analysis aimed to compare the efficacy and safety of NSAID, CS, and combination of both drugs to prevent CME after uncomplicated cataract surgery in non-diabetics, diabetics, and mixed population without CME preoperatively. We also investigate the efficacy of various NSAID and CS to prevent CME postoperatively. We found that NSAID combination with CS was significantly reduced the risk of developing CME postoperatively than the single drug. A combination of NSAID and CS were less likely to develop adverse events than CS alone. In terms of the efficacy of various NSAID, diclofenac was superior to bromfenac and nepafenac in preventing CME. In terms of the efficacy of various CS, dexamethasone was superior to betamethasone and fluorometholone in preventing CME.

The results were concordant with the findings of a recent systematic review by Laursen and his colleagues, reporting that combination treatments were better than CS alone at preventing CME [40]. However, this systematic review included only diabetics and did not investigate the effects of NSAID versus CS alone and a combination of NSAID and CS. A European multicenter trial in 2018 compared the efficacy of topical NSAID, CS, and a combination of both drugs, and demonstrated that a combination of NSAID and CS reduced the risk of developing CME than a single drug in

nondiabetics [14]. However, the results of the trials have shown inconsistent conclusions. Some studies showed NSAID had any benefit over CS alone in the prevention of CME postoperatively [28, 36]. We compared the efficacy of various NSAID and CS to prevent CME postoperatively. We found diclofenac was superior to other NSAID and CS in preventing CME. A current systematic review also showed the diclofenac was better efficacy than other NSAID for the treatment of anterior chamber inflammation after cataract surgery [41]. However, this review only compared the efficacy of various NSAID and did not investigate the effects of NSAID versus various CS in the prevention of developing CME. We also found that Dexamethasone was superior to betamethasone and fluorometholone in preventing CME. Dexamethasone was shown to reduce both vascular permeability and leukocyte aggregation [42].

There were some limitations to this study. First, CME usually occurs within 3 months after surgery, and a peak incidence at 4 to 6 weeks [5]. The duration of follow-up time in this study is up 4 weeks to 16 weeks. Second, in our NMA, three trials using the diagnose CME on fluorescein angiography in non-diabetics (Miyake 1999; Tickly 2014; Yavas 2007). Other trials used Optical Coherence Tomography to detect CME. It was proved that the incidence of developing CME was much higher using the method of fluorescein angiography (Miyake 1999; Tickly 2014; Yavas 2007). Third, only seven RCTs were comparing the efficacy of different kinds of NSAID and CS to prevent CME postoperatively, which may limit the power in our NMA.

Conclusion

NSAID combination with CS has significantly reduced the risk of developing CME postoperatively than the single drug in non-diabetics, diabetics, and mixed populations without CME preoperatively after uncomplicated cataract surgery. A combination of both drugs was less likely to develop adverse events than CS alone. Diclofenac was superior to bromfenac and nepafenac in preventing CME. Dexamethasone was superior to betamethasone and fluorometholone in preventing CME. A combination of diclofenac and dexamethasone to prevent CME might be the preferable treatments.

Declarations

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Conflicts of interests All authors declare they have no conflict of interests to declare that are relevant to the content of this article.

Availability of data and material All data are fully available without restriction.

Financial interests All authors have no relevant financial or non-financial interests to disclose.

Ethics approval This is a systematic review and network Meta-Analysis study. The data were based on previously published studies. The Beijing Friendship Hospital affiliated to Capital Medical University of Research Ethics Committee has confirmed that no ethical approval is required.

Consent to participants All analyses were based on previously published studies and therefore no patient consent is required.

Consent to publish All analyses were based on previously published studies and therefore no consent to publish is required.

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Figures

Figure 1

Flow chart of study selection for systematic review and meta-analysis

Study	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding of participants and personnel (performance bias)	Blinding of outcome assessment (detection bias)	Incomplete outcome data (attrition bias)	Selective reporting (reporting bias)	Other bias
Almeida 2008	?	?	?	?	?	?	?
Asano 2008	?	?	?	?	?	?	?
Campa 2017	?	?	?	?	?	?	?
Cervantes-Coste 2009	?	?	?	?	?	?	?
Chatziralli 2011	?	?	?	?	?	?	?
Dommenfeld 2006	?	?	?	?	?	?	?
Elsawy 2013	?	?	?	?	?	?	?
Italian Diclofenac Study Group 1997	?	?	?	?	?	?	?
Miyake 1999	?	?	?	?	?	?	?
Miyake 2007	?	?	?	?	?	?	?
Miyake 2011	?	?	?	?	?	?	?
Miyahara 2009	?	?	?	?	?	?	?
Moschos 2012	?	?	?	?	?	?	?
Pollack 2016	?	?	?	?	?	?	?
Rossetti 1996	?	?	?	?	?	?	?
Singh 2012	?	?	?	?	?	?	?
Singh 2017	?	?	?	?	?	?	?
Ticly 2014	?	?	?	?	?	?	?
Tzelikis 2018	?	?	?	?	?	?	?
Wang 2013	?	?	?	?	?	?	?
Wielders 2018	?	?	?	?	?	?	?
Wittmann 2008	?	?	?	?	?	?	?
Yavas 2007	?	?	?	?	?	?	?
Zaczek 2014	?	?	?	?	?	?	?

Figure 2

Risk of bias graph for each study in the network meta-analysis

a. CME with Non-diabetics

b. CME with Mixed populations

Figure 3

Relative rankings of estimated SUCRA values and of probabilities for being the best treatment strategies. CS: corticosteroid, NSAID: non-steroidal anti-inflammatory drugs, CME: cystoid macular edema

a. Network plot of the efficacy of various NSAID and CS

c. SUCRA ranking of the efficacy of various NSAID and CS

b. Network meta-analysis of the efficacy of various NSAID and CS

Nepafenac	5.70 (2.26, 14.38)	0.72 (0.17, 3.17)	1.95 (0.32, 12.07)	0.92 (0.14, 6.30)	2.25 (0.47, 10.74)
0.18 (0.07, 0.44)	Fluorometholone	0.13 (0.04, 0.40)	0.34 (0.07, 1.64)	0.16 (0.03, 0.87)	0.39 (0.11, 1.39)
1.38 (0.32, 6.03)	7.87 (2.50, 24.83)	Diclofenac	2.70 (0.93, 7.85)	1.28 (0.37, 4.35)	3.10 (1.84, 5.23)
0.51 (0.08, 3.16)	2.92 (0.61, 14.01)	0.37 (0.13, 1.08)	Dexamethasone	0.47 (0.24, 0.94)	1.15 (0.36, 3.68)
1.08 (0.16, 7.36)	6.17 (1.15, 33.10)	0.78 (0.23, 2.67)	2.11 (1.07, 4.19)	Bromfenac	2.43 (0.66, 8.93)
0.45 (0.09, 2.13)	2.54 (0.72, 8.97)	0.32 (0.19, 0.54)	0.87 (0.27, 2.79)	0.41 (0.11, 1.51)	Betamethasone