

III. 手術適応と視機能

1. 視力

勧告 (ガイドライン)

- a 白内障患者の視機能を評価するには、遠見視力の値のみでは不十分である (グレード B)。
- b 白内障手術の時期を決定するには、視力以外の視機能の障害程度をも評価することが推奨される (グレード B)。

エビデンス

白内障の存在は、コントラスト感度の低下やグレアを引き起こす¹⁻³⁾ (II-IV)。遠見視力が良好な早期白内障患者の中には、近見視力の低下やグレアを自覚していたり、夜間の運転に不自由を感じる者があり、これらの症状が白内障手術によって解消されることがある⁴⁻⁸⁾ (II-IV)。

- 1) 11544 Superstein R, Boyaner D, Overbury O: Functional complaints, visual acuity, spatial contrast sensitivity, and glare disability in preoperative and postoperative cataract patients. *J Cataract Refract Surg* 25 (4): 575-581, 1999
- 2) 13092 Pesudovs K, Coster DJ: An instrument for assessment of subjective visual disability in cataract patients. *Br J Ophthalmol* 82 (6): 617-624, 1998
- 3) 11622 Adamsons I, Rubin GS, Vitale S, Taylor HR, Stark WJ: The effect of early cataracts on glare and contrast sensitivity. A pilot study. *Arch Ophthalmol* 110 (8): 1081-1086, 1992
- 4) 13106 Adamsons IA, Vitale S, Stark WJ, Rubin GS: The association of postoperative subjective visual function with acuity, glare, and contrast sensitivity in patients with early cataract. *Arch Ophthalmol* 114 (5): 529-536, 1996
- 5) 13110 Cassard SD, Patrick DL, Damiano AM, Legro MW, Tielsch JM, Diener-West M, Schein OD, Javitt JC, Bass EB, Steinberg EP: Reproducibility and responsiveness of the VF-14. An index of functional impairment in patients with cataracts. *Arch Ophthalmol* 113 (12): 1508-1513, 1995
- 6) 11619 Mangione CM, Phillips RS, Seddon JM, Lawrence MG, Cook EF, Dailey R, Goldman L: Development of the 'Activities of Daily Vision Scale'. A measure of visual functional status. *Med Care* 30 (12): 1111-1126, 1992
- 7) 10284 Tobacman JK, Zimmerman B, Lee P, Hilborne L, Kolder H, Brook RH: Visual function impairments in relation to gender, age, and visual acuity in patients who undergo cataract surgery. *Ophthalmology* 105 (9): 1745-1750, 1998
- 8) 12225 Norregaard JC, Bernth-Petersen P, Andersen TF: Visual impairment and general health among Danish cataract patients. Results from the Danish Cataract Surgery Outcome Study. I. *Acta Ophthalmol Scand* 74 (6): 598-603, 1996

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2. コントラスト感度

勧告（ガイドライン）

- a 視力が良好な白内障患者の手術時期を決定する際には、コントラスト感度を測定することが推奨される（グレードB）。

エビデンス

水晶体に混濁がある患者では、コントラスト感度が有意に低下している^{1,7)} (IV)。コントラスト感度低下の程度は、水晶体混濁の部位によって異なる⁷⁾ (IV)。白内障手術によってコントラスト感度は上昇する^{1,3)} (IV)。術前にコントラスト感度が悪い患者ほど、手術後の満足度が高い³⁾ (IV)。

- 1) 11544 Superstein R, Boyaner D, Overbury O: Functional complaints, visual acuity, spatial contrast sensitivity, and glare disability in preoperative and postoperative cataract patients. *J Cataract Refract Surg* 25 (4): 575-581, 1999
- 2) 11622 Adamsons I, Rubin GS, Vitale S, Taylor HR, Stark WJ: The effect of early cataracts on glare and contrast sensitivity. A pilot study. *Arch Ophthalmol* 110 (8): 1081-1086, 1992
- 3) 13106 Adamsons IA, Vitale S, Stark WJ, Rubin GS: The association of postoperative subjective visual function with acuity, glare, and contrast sensitivity in patients with early cataract. *Arch Ophthalmol* 114 (5): 529-536, 1996
- 4) 13128 Chylack LT Jr, Jakubicz G, Rosner B, Khu P, Libman J, Wolfe JK, Padhye N, Friend J: Contrast sensitivity and visual acuity in patients with early cataracts. *J Cataract Refract Surg* 19 (3): 399-404, 1993
- 5) 11551 Elliott DB, Situ P: Visual acuity versus letter contrast sensitivity in early cataract. *Vision Res* 38 (13): 2047-2052, 1998
- 6) 11624 Drews-Bankiewicz MA, Caruso RC, Datiles MB, Kaiser-Kupfer MI: Contrast sensitivity in patients with nuclear cataracts. *Arch Ophthalmol* 110 (7): 953-959, 1992
- 7) 22912 弓削経夫, 小笹晃太郎, 山出新一: 白内障の混濁と視力およびコントラスト感度との相関. *日眼会誌* 97 (5): 619-26, 1993

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3. グレア

勧告（ガイドライン）

- a 視力が良好な白内障患者の手術時期を決定する際に、グレア評価については参考にとどめる（グレードC）。

エビデンス

水晶体に混濁が進行している人では、グレア光下での視力およびコントラスト感度が有意に低下している¹⁻⁵⁾ (IV-V)。早期の白内障患者のグレアによる障害が、白内障がない症例と比較して有意に大きいという確証はない⁵⁻⁸⁾ (IV)。術前のグレアの程度と手術後の満足度についての相関関係は証明されていない³⁾ (IV)。

- 1) 11544 Superstein R, Boyaner D, Overbury O: Functional complaints, visual acuity, spatial contrast sensitivity, and glare disability in preoperative and postoperative cataract patients. *J Cataract Refract Surg* 25 (4): 575-581, 1999
- 2) 11622 Adamsons I, Rubin GS, Vitale S, Taylor HR, Stark WJ: The effect of early cataracts on glare and contrast sensitivity. A pilot study. *Arch Ophthalmol* 110 (8): 1081-1086, 1992
- 3) 13106 Adamsons IA, Vitale S, Stark WJ, Rubin GS: The association of postoperative subjective visual function with acuity, glare, and contrast sensitivity in patients with early cataract. *Arch Ophthalmol* 114 (5): 529-536, 1996
- 4) 13100 Superstein R, Boyaner D, Overbury O, Collin C: Glare disability and contrast sensitivity before and after cataract surgery. *J Cataract Refract Surg* 23 (2): 248-253, 1997
- 5) 13132 Regan D, Giaschi DE, Fresco BB: Measurement of glare sensitivity in cataract patients using low-contrast letter charts. *Ophthalmic Physiol Opt* 13 (2): 115-123, 1993
- 6) 13139 Lasa MS, Datiles MB 3rd, Podgor MJ, Magno BV: Contrast and glare sensitivity. Association with the type and severity of the cataract. *Ophthalmology* 99 (7): 1045-1049, 1992
- 7) 11605 Regan D, Giaschi DE, Fresco BB: Measurement of glare susceptibility using low-contrast letter charts. *Optom Vis Sci* 70 (11): 969-975, 1993
- 8) 11615 Elliott DB, Bullimore MA: Assessing the reliability, discriminative ability, and validity of disability glare tests. *Invest Ophthalmol Vis Sci* 34 (1): 108-119, 1993

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- 13157 Neumann AC, McCarty GR, Locke J, Cobb B: Glare disability devices for cataractous eyes: a consumer's guide. *J Cataract Refract Surg* 14 (2): 212-216, 1988

4. 自覚的視覚障害

勧告（ガイドライン）

- a 視力が良好な白内障患者の手術時期を決定する際には、視力以外の自覚的な視覚障害を医療面接によって正しく把握することが推奨される（グレードC）。

エビデンス

白内障では、遠見視力が良好でも、自覚的に視覚障害を訴える患者がいる¹⁻⁴⁾ (IV)。患者が白内障手術を決断する上で重要視する視機能障害は、性別、年齢によって異なっている⁵⁾ (IV)。

- 1) 11544 Superstein R, Boyaner D, Overbury O: Functional complaints, visual acuity, spatial contrast sensitivity, and glare disability in preoperative and postoperative cataract patients. *J Cataract Refract Surg* 25 (4): 575-581, 1999
- 2) 13092 Pesudovs K, Coster DJ: An instrument for assessment of subjective visual disability in cataract patients. *Br J Ophthalmol* 82 (6): 617-624, 1998
- 3) 13110 Cassard SD, Patrick DL, Damiano AM, Legro MW, Tielsch JM, Diener-West M, Schein OD, Javitt JC, Bass EB, Steinberg EP: Reproducibility and responsiveness of the VF-14. An index of functional impairment in patients with cataracts. *Arch Ophthalmol* 113 (12): 1508-1513, 1995
- 4) 11619 Mangione CM, Phillips RS, Seddon JM, Lawrence MG, Cook EF, Dailey R, Goldman L: Development of the 'Activities of Daily Vision Scale'. A measure of visual functional status. *Med Care* 30 (12): 1111-1126, 1992
- 5) 10284 Tobacman JK, Zimmerman B, Lee P, Hilborne L, Kolder H, Brook RH: Visual function impairments in relation to gender, age, and visual acuity in patients who undergo cataract surgery. *Ophthalmology* 105 (9): 1745-1750, 1998

5. 視野

勧告（ガイドライン）

- a 白内障患者の視野検査の結果を解析する際には、白内障による感度低下を考慮する必要がある（グレードC）。

エビデンス

白内障の存在によって、視野の感度は全体的に低下する¹⁾ (IV)。白内障の存在は、blue-on-yellow perimetry における感度を有意に低下させる²⁾ (III)。

- 1) 11613 Yao K, Flammer J: Relationship cataract density and visual field damage. Eur J Ophthalmol 3 (1): 1-5, 1993
- 2) 13113 Moss ID, Wild JM, Whitaker DJ: The influence of age-related cataract on blue-on-yellow perimetry. Invest Ophthalmol Vis Sci 36 (5): 764-773, 1995

6. 視機能障害以外の手術適応

勧告（ガイドライン）

- a 視機能が良好であっても、眼圧低下や屈折矯正を目的として水晶体摘出術が必要なことがある（グレードC）。

エビデンス

水晶体融解緑内障に対して眼圧低下の目的で水晶体摘出術は有用である^{1,2)} (IV)。近視、遠視、乱視の症例で屈折矯正を目的とした水晶体超音波乳化吸引術と眼内レンズ挿入術が適応になることがある³⁾ (IV)。

- 1) 12069 Braganza A, Thomas R, George T, Mermoud A: Management of phacolytic glaucoma: experience of 135 cases. *Indian J Ophthalmol* 46 (3): 139-143, 1998
- 2) 12087 Mandal AK, Gothwal VK: Intraocular pressure control and visual outcome in patients with phacolytic glaucoma managed by extracapsular cataract extraction with or without posterior chamber intraocular lens implantation. *Ophthalmic Surg Lasers* 29 (11): 880-889, 1998
- 3) 12038 Vicary D, Sun XY, Montgomery P: Refractive lensectomy to correct ametropia. *J Cataract Refract Surg* 25 (7): 943-948, 1999

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7. インフォームドコンセント

勧告（ガイドライン）

- a 手術が適応になった場合、術中術後に合併症が生じる可能性について説明し、同意を得なければならない。

エビデンス

IV. 手術 2. 手術 4) 術中合併症、および 5) 術後合併症の項を参照。

IV. 手術

1. 術前管理

1) 全身状態・術前処置

勧告（ガイドライン）

a 術前散瞳に非ステロイド系消炎剤の点眼が効果的である（グレードB）。

※ 術前の消毒剤・抗菌剤使用の有効性について現時点では有用なエビデンスなし。

エビデンス

術前の眼瞼皮膚、結膜からの擦過細菌検出率は84.6%、36.7%ある¹⁾ (III)。術前にポビドンヨード溶液で洗浄もしくは点眼すると結膜囊および前房中の細菌培養後のコロニー検出率を低下させることができる¹⁻³⁾ (III)。※ただし、患者アウトカムを検討した研究はない。

白内障術後早期(4~6時間)眼圧上昇に術前1時間前よりのアセトザラミド500mgの内服、ドルゾラミドの点眼が有効である^{4,5)} (III)。

非ステロイド系消炎剤には白内障術前散瞳維持効果がある^{6,7)} (III)。

- 1) 13252 Hara J, Yasuda F, Higashitsutsumi M: Preoperative disinfection of the conjunctival sac in cataract surgery. *Ophthalmologica* 211 (Suppl 1): 62-67, 1997
- 2) 11932 Mendivil Soto A, Mendivil MP: The effect of topical povidone-iodine, intraocular vancomycin, or both on aqueous humor cultures at the time of cataract surgery. *Am J Ophthalmol* 131 (3): 293-300, 2001
- 3) 13283 Derekliis DL, Bufidis TA, Tsiakiri EP, Palassopoulos SI: Preoperative ocular disinfection by the use of povidone-iodine 5%. *Acta Ophthalmol (Copenh)* 72 (5): 627-630, 1994
- 4) 12090 Byrd S, Singh K: Medical control of intraocular pressure after cataract surgery. *J Cataract Refract Surg* 24 (11): 1493-1497, 1998
- 5) 12092 Zohdy GA, Rogers ZA, Lukaris A, Sells M, Roberts-Harry TJ: A comparison of the effectiveness of dorzolamide and acetazolamide in preventing post-operative intraocular pressure rise following phacoemulsification surgery. *J R Coll Surg Edinb* 43 (5): 344-346, 1998
- 6) 12441 Dube P, Boisjoly HM, Bazin R, Chamberland G, Laughrea PA, Dube I: Comparison of prednisolone acetate and indomethacin for maintaining mydriasis during cataract surgery. *Can J Ophthalmol* 25 (5): 234-238, 1990
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2. 手術

1) 麻酔方法・麻酔剤

勧告（ガイドライン）

a 白内障手術には、症例の難易度や術者の技量に合わせた麻酔方法を選択する（グレード B）。

エビデンス

白内障手術の麻酔方法に、全身麻酔と局所麻酔がある¹⁾ (IV)。全身麻酔では術後吐き気、咽頭痛、ふらつき、血圧低下などの副作用がある^{2,3)} (II-IV)。また局所麻酔のほう方が代謝や心血管反応に対する影響が少ない⁴⁾ (II)。

点眼麻酔は麻酔そのものに対するストレスは少ないが術中の疼痛が若干多く、患者の疼痛のため手術難易度が高くなるとされる^{5,6)} (III)。麻酔方法については各方法とも有用で、基本的には麻酔効果、白内障術後成績は変わらない⁷⁻¹⁰⁾ (I, II, IV)。前房内麻酔は点眼麻酔を選択した場合に麻酔効果が弱いときの補助として使われる¹¹⁻¹³⁾ (II-III)。テノン嚢麻酔は麻酔後早期に眼圧を上昇させる作用がある^{14,15)} (II-III)。球後麻酔は鎮痛効果は強いが麻酔時の疼痛が強く、結膜下出血、眼瞼出血、球後出血などの副作用がある¹⁶⁻¹⁸⁾。麻酔の前投薬には疼痛・不安を減少させる作用があるが吐き気や嘔吐などの副作用が生じる可能性がある¹⁹⁾ (IV)。

- 1) 13243 Norregaard JC, Schein OD, Bellan L, Black C, Alonso J, Bernth-Petersen P, Dunn E, Andersen TF, Espallargues M, Anderson GF: International variation in anesthesia care during cataract surgery: results from the International Cataract Surgery Outcomes Study. *Arch Ophthalmol* 115 (10): 1304-1308, 1997
- 2) 12248 Barker JP, Vafidis GC, Hall GM: Postoperative morbidity following cataract surgery. A comparison of local and general anaesthesia. *Anaesthesia* 51 (5): 435-437, 1996
- 3) 12369 Campbell DN, Lim M, Muir MK, O'Sullivan G, Falcon M, Fison P, Woods R: A prospective randomised study of local versus general anaesthesia for cataract surgery. *Anaesthesia* 48 (5): 422-428, 1993
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- 8) 11980 Ripart J, Lefrant JY, Vivien B, Charavel P, Fabbro-Peray P, Jaussaud A, Dupeyron G, Eledjam JJ: Ophthalmic regional anesthesia: medial canthus episcleral (sub-tenon) anesthesia is more efficient than peribulbar anesthesia: A double-blind randomized study. *Anesthesiology* 92 (5): 1278-1285, 2000

- 9) 12107 Nielsen PJ, Allerod CW: Evaluation of local anesthesia techniques for small incision cataract surgery. *J Cataract Refract Surg* 24 (8): 1136-1144, 1998
- 10) 12161 Shammam HJ, Milkie M, Yeo R: Topical and subconjunctival anesthesia for phacoemulsification: prospective study. *J Cataract Refract Surg* 23 (10): 1577-1580, 1997
- 11) 12000 Boulton JE, Lopatzidis A, Luck J, Baer RM: A randomized controlled trial of intracameral lidocaine during phacoemulsification under topical anesthesia. *Ophthalmology* 107 (1): 68-71, 2000
- 12) 12079 Crandall AS, Zabriskie NA, Patel BC, Burns TA, Mamalis N, Malmquist-Carter LA, Yee R: A comparison of patient comfort during cataract surgery with topical anesthesia versus topical anesthesia and intracameral lidocaine. *Ophthalmology* 106 (1): 60-66, 1999
- 13) 12089 Tseng SH, Chen FK: A randomized clinical trial of combined topical-intracameral anesthesia in cataract surgery. *Ophthalmology* 105 (11): 2007-2011, 1998
- 14) 12011 Azmon B, Alster Y, Lazar M, Geyer O: Effectiveness of sub-Tenon's versus peribulbar anesthesia in extracapsular cataract surgery. *J Cataract Refract Surg* 25 (12): 1646-1650, 1999
- 15) 12095 Sanford DK, Minoso y de Cal OE, Belyea DA: Response of intraocular pressure to retrobulbar and peribulbar anesthesia. *Ophthalmic Surg Lasers* 29 (10): 815-817, 1998
- 16) 12126 Patel BC, Clinch TE, Burns TA, Shomaker ST, Jessen R, Crandall AS: Prospective evaluation of topical versus retrobulbar anesthesia: a converting surgeon's experience. *J Cataract Refract Surg* 24 (6): 853-860, 1998
- 17) 12239 Khoo BK, Lim TH, Yong V: Sub-Tenon's versus retrobulbar anesthesia for cataract surgery. *Ophthalmic Surg Lasers* 27 (9): 773-777, 1996
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- 12208 Maclean H, Burton T, Murray A: Patient comfort during cataract surgery with modified topical and peribulbar anesthesia. *J Cataract Refract Surg* 23 (2): 277-283, 1997
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- 13188 Naor J, Slomovic AR: Anesthesia modalities for cataract surgery. *Curr Opin Ophthalmol* 11 (1): 7-11, 2000
- 13197 Tokuda Y, Oshika T, Amano S, Yoshitomi F, Inouye J: Anesthetic dose and analgesic effects of sub-Tenon's anesthesia in cataract surgery. *J Cataract Refract Surg* 25 (9): 1250-1253, 1999
- 13254 Dinsmore SC: Approaching a 100% success rate using topical anesthesia with mild intravenous sedation in phacoemulsification procedures. *Ophthalmic Surg Lasers* 27 (11): 935-938, 1996

2) 手術方法 (超音波乳化吸引術・囊外摘出術・囊内摘出術)

勧告 (ガイドライン)

- a 白内障手術方法として超音波水晶体乳化吸引術および眼内レンズ挿入術が推奨される (グレードA)。
- b 手術補助剤として粘弾性物質の使用が推奨される (グレードB)。

エビデンス

白内障手術を行うと 95.5%の症例で 20/40 以上の視力を得ることができる¹⁾ (II)。眼内レンズ挿入例と非挿入例の Quality of life は眼内レンズ挿入術を行った症例で有意に高い²⁾ (III)。超音波乳化吸引術と計画的囊外摘出術を比較すると、超音波乳化吸引術で術後早期から 60 日までフレア値が有意に低く、フルオロフォトメーターにて術後 3 日、3 ヶ月に血液房水柵の破綻をみとめた³⁻⁶⁾ (II・III)。前房内術後細胞数も超音波乳化吸引術群で低値であった⁶⁾ (III)。平均角膜内皮細胞減少率は差がなかった^{7,8)} (III)。超音波乳化吸引術では術中超音波時間が長いほど角膜内皮細胞減少率が高かった⁹⁾ (III)。眼圧は術後両群とも低下し、術後 6 ヶ月で計画的囊外摘出術 1.1mmHg、超音波乳化吸引術 0.6mmHg 低下した¹⁰⁾ (III)。術後視力は超音波乳化吸引術のほうの方が計画的囊外摘出術より術後最高視力が高い症例が多い¹¹⁾ (IV)。患者アンケートによる白内障手術後の満足度は超音波乳化吸引術群で有意に高かった¹²⁾ (III)。

白内障手術において前房維持、角膜内皮細胞保護に粘弾性物質が有効である^{13,14)} (III)。粘弾性物質としてヒアルロン酸 (凝集型) とコンドロイチン硫酸・ヒアルロン酸の合剤 (分散型) があるが粘弾性物質の種類で視力予後は変わらない¹⁵⁾ (II)。分散型は角膜内皮の形状保護作用があり¹⁶⁾ (II)、角膜内皮細胞の減少率は低値である¹⁷⁾ (III) という報告と分散型と凝集型で差がないという報告がある^{16,18-20)} (II・III)。粘弾性物質と眼圧の関係では分散型は術後早期に眼圧の上昇をきたす²¹⁻²⁴⁾ (II・III) という報告と凝集型のほうが上昇するという報告¹⁹⁾ (II)、両者で差がないという報告がある²⁰⁾ (III)。

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3) 切開創・眼内レンズ

勧告 (ガイドライン)

a 超音波乳化吸引術に際し術後惹起乱視を考え、小切開創と foldable 眼内レンズを選択する (グレード A)。

※ 多焦点眼内レンズの有効性については明らかでない。

エビデンス

白内障手術では切開創が計画的囊外摘出術よりも小さい超音波乳化吸引術のほうが術後惹起乱視が少なく¹⁾ (II)、超音波乳化吸引術の中でも切開創が小さい術式のほうが術後惹起乱視は少ない²⁻⁹⁾ (II-III)。小切開白内障手術は縫合が不要である。縫合、無縫合で比較しても裸眼視力・術後乱視に差はなかった¹⁰⁾ (III)。また、切開創がさらに小さくなるとフレア値が低下し、裸眼視力も良かった^{7,12)} (II-III)。小切開白内障手術の切開位置は、上方切開では倒乱視化し、耳側切開では直乱視化する¹³⁻¹⁵⁾ (III)。切開位置では上方、9時と12時の間、耳側の順に惹起乱視は少ない¹⁶⁾ (III)。術後のフレア値は強膜切開よりも角膜切開が若干低い¹⁷⁾ (II)が、術後惹起乱視は強膜切開より角膜切開のほうが大きい¹⁸⁾ (III)。4mmの上方角膜切開で約1.52D、上方強角膜切開で約0.69D、耳側角膜切開で約0.69Dの術後惹起乱視を生じる¹⁹⁾ (III)。

眼内レンズ別の比較では、PMMA眼内レンズより小切開で手術が行えるアクリル、シリコーン眼内レンズのほうが術後惹起乱視が少ない^{1,7,11,20)} (II-III)。白内障術後前囊収縮はPMMA、アクリル、シリコーン眼内レンズのなかでシリコーン眼内レンズの前囊収縮が最も高度であった^{21,22)} (III)。術後の眼内レンズ傾斜・偏心はPMMA、シリコーン、アクリル眼内レンズ間で差はなかった²³⁾ (II)。角膜内皮細胞減少率は眼内レンズ間で差はなかった²⁴⁾ (III)。ヘパリンコート眼内レンズは術後眼内レンズ上の細胞沈着を抑制する。糖尿病症例や緑内障症例でも術後3~6ヶ月に眼内レンズ上の細胞沈着がヘパリンコートしていない眼内レンズに比べて有意に低下していた²⁵⁻²⁷⁾ (III)。

多焦点眼内レンズは単焦点眼内レンズに比べ裸眼視力がよく、術後日常生活上眼鏡を必要としない率が高い^{28,29)} (II-III)。遠見、近見ともに良好な視力を得ることができる^{30,31)} (II)。しかし、多焦点眼内レンズは術後にグレアやハローが生じることが多い^{28,31,32)} (II,IV)。多焦点眼内レンズを使用する場合は両眼挿入例で視機能が良かった³³⁾ (IV)。

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4) 術中合併症

エビデンス

白内障術中合併症は切開創閉鎖不全・虹彩脱出 0.6%、前房出血 0.5%、虹彩損傷 1.3%、後囊破損・チン小帯断裂が 3.1%、硝子体脱出 0.8%、硝子体出血 0.3%、脈絡膜下出血 0.3%であった¹⁾ (II)。他方、後囊破損・チン小帯断裂が 1.95%、前房出血 0.5-1.67%、前房虚脱 0.5%、後囊混濁の残存 1.39%、虹彩脱出 1.26%、虹彩・毛様体断裂・虹彩損傷 0.84-0.3%、皮質残存 0.70%、麻酔に伴う強膜穿孔・球後出血 0.70%、核硝子体内落下 0.28-0.3%、眼内レンズ硝子体内落下 0.16%、脈絡膜下出血 0.14%、眼内レンズ固定異常 0.14%、デスメ膜剥離 0.1%、切開創閉鎖不全 0.1%^{2,3)} (IV) という報告がある。

術中合併症を生じる危険因子として糖尿病網膜症、緑内障^{4,5)}(IV)、(偽)落屑症候群⁶⁻⁹⁾(IV)、未熟児網膜症¹⁰⁾(IV)、高度近視¹¹⁾(IV)、硝子体手術の既往^{12,13)}(IV)、後極白内障¹⁴⁾(IV)、過熟白内障¹⁵⁾(IV) がある。(別表参照)

※Cataract in the adult eye (2001, American academy of ophthalmology) を参考とした。

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術中合併症を生じる危険因子

危険因子	危険因子に関連する病態・合併症	文献	EV level
糖尿病網膜症	小瞳孔 *糖尿病の項目参照		
緑内障	虹彩損傷 小瞳孔	48014 48027	IV IV
(偽)落屑症候群	小瞳孔 チン小帯断裂 後囊破損・硝子体脱出、水晶体動揺 浅前房	10643, 10309 48024, 10309 10309 48010	IV IV IV IV
未熟児網膜症	核硬化	48023	IV
高度近視	駆逐性出血	48026	IV
硝子体手術既往	小瞳孔、結膜癒着、前房深度動揺(深前房) チン小帯脆弱、後囊破損、硝子体脱出	10389 48019	IV IV
後極白内障	後囊破損、硝子体脱出	10236	IV
過熟白内障	前囊切開困難、囊内圧上昇、核硬化	11802	IV