

DAFTAR PUSTAKA

- World Health Organization. (2016). Global report on diabetes. World Health Organization. <http://www.who.int/iris/handle/10665/204871>
- IDF Diabetes Atlas : sixth edition, 6th ed.(2017). Edited by Guariguata, Leonor, Nolan, Tim, Beagley, Jessica, Linnenkamp, Ute and Jacqmain, Olivier, International Diabetes Federation, Basel, Switzerland.
- Badan Penelitian dan Pengembangan Kesehatan. (2009). Report on result of national basic health research (Riskesdas), 2007. [Jakarta] : National Institute of Health Research and Development, Ministry of Health, Republic of Indonesia
- Badan Penelitian dan Pengembangan Kesehatan. (2013). Report on result of national basic health research (Riskesdas), 2003. [Jakarta] : National Institute of Health Research and Development, Ministry of Health, Republic of Indonesia
- Soewondo P, Soegondo S, Suastika K, Pranoto A, Soetmadji DW, Tjokropawiro A. 2010. The DiabCare Asia 2008 study – Outcomes on control and complications of type 2 diabetic patients in Indonesia. *Med J Indones*, 19(4): 235-244.
- Kautzky-Willer A, Harreiter J, Pacini G. Sex and gender differences in risk, pathophysiology and complications of type 2 diabetes mellitus. *Endocr Rev*. (2016) 37:278–316. 10.1210/er.2015-1137
- Chilelli N. C., Burlina S., Lapolla A. AGEs, rather than hyperglycemia, are responsible for microvascular complications in diabetes: a “glycoxidation-centric” point of view. *Nutrition, Metabolism and Cardiovascular Diseases*. 2013;23(10):913–919. doi: 10.1016/j.numecd.2013.04.004.
- Nguyen DV, Shaw LC, Grant MB: inflammation in the pathogenesis of microvascular complications in diabetes. *Front Endocrinol (Lausanne)*. 2012;3:170.
- Khoury JC, Kleindorfer D, Alwell K, Moomaw CJ, Woo D, Adeoye O, et al. Diabetes mellitus: a risk factor for ischemic stroke in a large biracial population. *Stroke* 2013; 44: 1500–4
- Watanabe K, Hagura R, Akanuma Y, et al. Characteristics of cranial nerve palsies in diabetic patients. *Diabetes Res Clin Pract* 1990;10:19–27

- Hung CC, Lin HY, Hwang DY, Kuo IC, Chiu YW, Lim LM, Hwang SJ, Chen HC. Diabetic retinopathy and clinical parameters favoring the presence of diabetic nephropathy could predict renal outcome in patients with diabetic kidney disease. *Sci Rep.* 2017;7:1236. doi: 10.1038/s41598-017-01204-6.
- Rucker CW. Paralysis of the third, fourth and sixth cranial nerves. *Am J Ophthalmol* 1958;46:787–794.
- Walsh FB, Hyot WF. *Clinical Neuro-Ophthalmology*. 3rd ed. Baltimore M.D: Williams & Wilkins Co; 1969. pp. 255–6.
- Gregory L, Louis B, Jayne S. 2012. Basic and Clinical Science Course Section 12: Retina and Vitreous. American Academy of Ophthalmology (AAO) 2011-2012, 5-31, 109-31.
- Klein R, Klein B, Moss S, Davis M, DeMets D. 1984. The Wisconsin Epidemiological Study of Diabetic Retinopathy II. Prevalence and risk of diabetic retinopathy when age at diagnosis is less than 30 years. *Arch Ophthalmol* 1984, 102: 520-526
- Merimee TJ: Diabetic retinopathy, a synthesis of perspectives. *N. Engl. J. Med.* 322: 978 ± 983, 1990
- Perrin R, Konopatskaya O, Qiu Y, et al. Diabetic retinopathy is associated with a switch in splicing from anti- to pro-angiogenic isoforms of vascular endothelial growth factor. *Diabetologia* 2005; 48:2422–2427.
- Goldstein JE, Cogan DG. Diabetic ophthalmoplegia with special reference to the pupil. *Arch Ophthalmol.* 1960;64:592–600.
- Green WR, Hackett ER, Schlezinger NS: Neuro-ophthalmologic evaluation of oculomotor nerve paralysis. *Arch Ophthalmol* 72: 154– 167, 1964.
- Eshbaugh CG, Siarkowski RM, Smith JL, Kline LB. Simultaneous, multiple cranial neuropathies in diabetes mellitus. *J Neuroophthalmol.* 1995;15:219-224. <https://doi.org/10.1097/00041327-199512000-00004>.
- Fong DS, Aiello LP, Ferris FL 3rd, Klein R. Diabetic retinopathy. *Diabetes Care.* 2004;27(10):2540–53.
- Frank R.N. Varma S.D. Aldose reductase activity in retinal and cerebral microvessels and cultured vascular cells. *Invest. Ophthalmol. Vis. Sci.* 1983;24:1250–1258.

- Engerman RL, Kern TS. Experimental galactosemia produces diabetic-like retinopathy. *Diabetes*. 1984;33:97–100.
- Gabbay K. H. Hyperglycemia, polyol metabolism, and complications of diabetes mellitus. *Annual Review of Medicine*. 1975;26(1):521–536. doi: 10.1146/annurev.me.26.020175.002513.
- Tomlinson DR, Willars GB, Carrington AL. Aldose reductase inhibitors and diabetic complications. *Pharmacol Ther*. 1992;54:151–94.
- Arauz-Pacheco C, Ramirez LC, Lackner C, Albright G, Adams BV, Raskin P. Ann Lipoprotein (a) levels in diabetes mellitus: relationship to metabolic control *Intern Med*. 1992;117:42–47.
- Brownlee M, Vlassara H, Cerami A. Nonenzymatic glycosylation and the pathogenesis of diabetic complications. *Ann Intern Med*. 1984;101(4):527–37.
- Chawla A, Chawla R, Jaggi S. Microvascular and macrovascular complications in diabetes mellitus: Distinct or continuum? *Indian Journal of Endocrinology and Metabolism*. 2016;20(4):546-551. doi:10.4103/2230-8210.183480.
- Wautier JL, *et al* AGEs bind to mesothelial cells via RAGE and stimulate VCAM-1 expression. *Kidney Int* 2002; 61 : 148–156.
- Hammes HP, Martin S, Federlin K, Geisen K, Brownlee M. Aminoguanidine treatment inhibits the development of experimental diabetic retinopathy. *Proc Natl Acad Sci U S A*. 1991;88:11555–11558.
- Raskin P, Caltran D, William M, *et al*. Pimagedine reduces progression of retinopathy and lowers lipid concentrations in patients with type I diabetes (Abstract). *J Am Soc Nephrol* 10:179A, 1999
- Giugliano D., Ceriello A., Paolisso G. (1996). Oxidative stress and diabetic vascular complications. *Diabetes Care* 19, 257–267. 10.2337/diacare.19.3.257
- Nishikawa T, Edelstein D, Du XL, Yamagishi S, Matsumura T, Kaneda Y, Yorek MA, Beebe D, Oates PJ, Hammes HP, *et al*. Normalizing mitochondrial superoxide production blocks three pathways of hyperglycaemic damage. *Nature*. 2000;404(6779):787–790. doi: 10.1038/35008121.
- Kunisaki M, Bursell SE, Clermont AC, Ishii H, Ballas LM, Jirousek MR, *et al*. Vitamin E prevents diabetes-induced abnormal retinal blood flow

via the diacylglycerol-protein kinase C pathway. *Am J Physiol* 1995; 269: E239–E46.

Bursell SE, Clermont AC, Aiello LP, Aiello LM, Schlossman DK, Feener EP, et al. High-dose Vitamin E supplementation normalizes retinal blood flow and creatinine clearance in patients with type 1 diabetes. *Diabetes Care*. 1999;22:1245–51.

Ways, D. K., & Sheetz, M. J. (2000). The role of protein kinase C in the development of the complications of diabetes. *Vitamins & Hormones*, 149–193. doi:10.1016/s0083-6729(00)60019-5

Shiba T, et al. Correlation of diacylglycerol level and protein kinase C activity in rat retina to retinal circulation. *Am. J. Physiol.* 1993;265:E783–E793.

Inoguchi T., Battan R., Handler E., Sportsman J. R., Heath W., King G. L. Preferential elevation of protein kinase C isoform beta II and diacylglycerol levels in the aorta and heart of diabetic rats: differential reversibility to glycemic control by islet cell transplantation. *Proceedings of the National Academy of Sciences of the United States of America*. 1992;89(22):11059–11063. doi: 10.1073/pnas.89.22.11059.

Regillo, C., Holekamp, N., Johnson, M.W., Kaiser, P.K., Schubert, H.D., Spaide, R., *Retina and Vitreous; Basic and Clinical Science Course Sec. 12, AAO, San Fransisco, 2011- 2012, Hal 7- 17*

Falcao M., Falcao-Reis F., Rocha-Sousa A. *Diabetic Retinopathy: Understanding Pathologic Angiogenesis and Exploring its Treatment Options*. The Open Circulation and Vascular Journal. 2010. 3. 30-42

Yang, Y. Zhang, Y. Li, Y. *Inflammation and Angiogenesis in Diabetic Retinopathy*. 2012. www.intechopen.com

Phillips, B.E, Antonetti, D.A. *Blood-Retinal Barrier, Retinal Vascular Leakage, and Macular Edema*. In: Retinal Vascular Disease. Springer-Verlag. 2007. Hal 139-147

Antonetti DA, Kein R. and Gardner TW. *Mechanism of Disease Diabetic Retinopathy*. In: New England Journal of Medicine. 2012. Hal 1227-1239

Vaz, C.J. *Blood-Retinal Barrier*. In: Retina and Its Disorder. 2010. Elseiver. Hal 44-50

- Lee, B.J, Kim, J.H, *The Molecular Pathogenesis of Diabetic Retinopathy- A Spectrum of Pathology Caused by the Disruption of Inner Blood-Retinal Barrier*. 2012. www.intechopen.com
- Kaufman, P. L.,MD, Albert, MD, , *Adler's Physiology of the Eye Clinical Application*, 10th ed. St. Louis, Missouri, Mosby, 2002. Hal 3-7
- Badan Penelitian dan Pengembang Kesehatan Kementerian Kesehatan RI. Riset Kesehatan Dasar 2013. Diabetes Melitus. Hal 87-88
- Khurana, A K. *Disease of The Retina*. In: Comprehensive Ophthalmology Fourth Edition. New Age International Limited Publisher. 2007. Hal 259-263
- Doshi S dan Harvey B. *Diabetes and Eye*. In: Eye Essential. Butterworth Heinemann Elsevier Publisher. 2008.
- Stewart, MW. *Pathophysiology of Diabetic Retinopathy*. In: Diabetic Retinopathy: Evidence Based Management. Springer Science+Business Media. 2010.
- Contreras CL dan Novakofski KC. *Dietary Advanced Glycation End Products and Aging*.2010. www.mdpi.com/journal/nutrients.
- Kern S. Timothy. Contribution of Inflammatory Process to the Development of the Early Stages of Diabetic Retinopathy. *Experimental Diabetes Research*. 2007
- Tang J, Kern T. Inflammation in Diabetic Retinopathy. *Prog Retin Eye Res*. 2011 September;30(5): 343-358
- Park, S.S., Siegelman J., Gragoudas E.S.: *The Anatomy and Cell Biology of the Retina on Duane's Clinical Ophthalmology.*, On CD ROM.,Lippincott and William Wilkins.
- Arevalo J.F, Sanchez J.G, Lasave A.F et al. Intravitreal Bevacizumab (Avastin) for Diabetic Retinopathy: The 2010 LADAOF Lecture.. *Journal of Ophthalmology* Volume 2011. Hindawi Publishing Corporation. 1-13
- Pascale M, Fransesco B, Justus G.G et al. Safety and Efficacy of Ranibizumab in Diabetic Macular Edema (RESOLVE Study). *Journal of Diabetes Care* Volume 33 Number 11 November 2010. 2399-2405
- Brown DM, et al. *Long-term Outcome of Ranibizumab Therapy for Diabetic Macular Edema: The 36-Month Result from Two Phase III Trials RISE and RIDE*. American Academy of Ophthalmology. Elsevier. 2013.

- Mitchell P, et al. *The RESTORE Study: Ranibizumab Monotherapy or Combined with Laser Versus Laser Monotherapy for Diabetic Macular Edema*. American Academy of Ophthalmology. Elsevier. 2011.
- Edelman JL, Lutz D, Castro MR. Corticosteroids Inhibit VEGF-induced Vascular Leakage in a Rabbit Model of Blood-Retinal and Blood-Aqueous Barrier Breakdown. *Exp Eye Res* 2005;80(2):249-258
- Jonas JB, et al. *Diffuse Diabetic Macular Oedema Treated by Intravitreal Triamcinolone Acetonide: A Comparative, Non-randomised Study*. *British Journal Ophthalmology*. 2005. Hal.321-326
- Regillo, C., Holekamp, N., Johnson, M.W., Kaiser, P.K., Schubert, H.D., Spaide, R., *Basic and Clinical Science Course, Section 2: Fundamental and principles of ophthalmology*. 2016-2017; San Fransisco: American Academy of Ophthalmology
- Monkouse S. *Cranial nerves Functional Anatomy*. Cambridge University Press. 2006; 3-132
- Regillo, C., Holekamp, N., Johnson, M.W., Kaiser, P.K., Schubert, H.D., Spaide, R., *Basic and Clinical Science Course, Section 5 : Neuro-Ophthalmology*. (2016-2017). San Fransisco: American Academy of Ophthalmology.
- Agarwal, A., & Agarwal, A. (2008). *Manual of Neuro-Ophthalmology*. New Delhi: Jaypee Brothers Medical Publishers.
- Duane's Clinical Ophthalmology*. (2005). Philadelphia: Lippincott Williams & Wilkins.
- Sidarta P, Mahar Marjono. *Neurologi Klinis Dasar, edisi 6*. Jakarta. Dian Rakyat. 1994. 116-60
- Kidd, D., Newman, N., & Biousse, V. (Eds.). (2008). *Neuro-Ophthalmology*. Philadelphia: Butterworth Heinemann-Elsevier.
- Vaughan DG. Ashbury T. Riordan-Eva P. Strabismus. Dalam *Oftalmologi Umum*, edisi 14. Widya Medika. Jakarta. 2000: 240 – 60.
- Snell RS. Movement of eye ball and the extraocular muscle. In: *Clinical anatomy of the eye*. second edition. W Blackwell Science Inc. 1998: 232-71
- Porter J. D., Andrade F.H. & Baker R.S. The extraocular muscle in Adler's physiology of the eye. 10th edition. Mosby inc. Wisconsin. 2003: 787-815.

- Michael C. Johnson, Bruno Policeni, Andrew G. Lee, Wendy R.K. Smoker- Imaging in Ophthalmology (Ophthalmology Monograph Series)-Oxford University Press, USA (2010).1,2: 3-88.
- Preston, DC. MRI Basic, 2006, available at: <http://casemed.case.edu/clerkships/neurology/Web%20Neurorad/MRI%20Basics.htm>
- Chou KL, Galetta SL, Liu GT, et al. Acute oculomotor mononeuropathies: prospective study of the roles of Neuromaging and clinical assessment. *J Neurol Sci* 2004;219(12):35–39.
- Murchison AP, Gilbert ME, Savino PJ. Neuroimaging and acute ocular motor mononeuropathies: a prospective study. *Arch Ophthalmol* 2011;129(3):301–305.
- Pedersen RA, Troost BT. Abnormalities of gaze in cerebrovascular disease. *Stroke; a journal of cerebral circulation* 1981;12:251-4.
- Finocchi C, Del Sette M, Croce R, Giberti L, Serrati C, Gandolfo C. Bilateral ophthalmoplegia: an unusual sign of the top of the basilar artery syndrome. *Italian journal of neurological sciences* 1996;17:301-4.
- Righini A, Antonini A, De Notaris R, et al. MR imaging of the superior profile of the midbrain: differential diagnosis between progressive supranuclear palsy and Parkinson disease. *AJNR American journal of neuroradiology* 2004;25:927-32.
- Zuccoli G, Pipitone N. Neuroimaging findings in acute Wernicke's encephalopathy: review of the literature. *AJR American journal of roentgenology* 2009;192:501-8.
- Koga H, Mori K, Kawano T, Tsutsumi K, Jinnouchi T. Parinaud's syndrome in hydrocephalus due to a basilar artery aneurysm. *Surgical neurology* 1983;19:548-53.
- Khalil M, Malik TG, Farooq K. Weber's syndrome with vertical gaze palsy. *Journal of the College of Physicians and Surgeons--Pakistan : JCPSP* 2009;19:668-9.
- Liu GT, Crenner CW, Logigian EL, Charness ME, Samuels MA. Midbrain syndromes of Benedikt, Claude, and Nothnagel: setting the record straight. *Neurology* 1992;42:1820-2.
- Brown WD. Osmotic demyelination disorders: central pontine and extrapontine myelinolysis. *Current opinion in neurology* 2000;13:691-7.

- Rizzo JF, 3rd, Andreoli CM, Rabinov JD. Use of magnetic resonance imaging to differentiate optic neuritis and nonarteritic anterior ischemic optic neuropathy. *Ophthalmology* 2002;109:1679-84.
- Balcer LJ, Galetta SL, Bagley LJ, Pakola SJ. Localization of traumatic oculomotor nerve palsy to the midbrain exit site by magnetic resonance imaging. *American journal of ophthalmology* 1996;122:437-9.
- Sherman SC, Buchanan A. Gradenigo syndrome: a case report and review of a rare complication of otitis media. *The Journal of emergency medicine* 2004;27:253-6.
- Kuehnen J, Schwartz A, Neff W, Hennerici M. Cranial nerve syndrome in thrombosis of the transverse/sigmoid sinuses. *Brain : a journal of neurology* 1998;121 (Pt 2):381-8.
- Schuknecht B, Simmen D, Yuksel C, Valavanis A. Tributary venous sinus occlusion and septic cavernous sinus thrombosis: CT and MR findings. *AJNR American journal of neuroradiology* 1998;19:617-26.
- Jain R, Sawhney S, Koul RL, Chand P. Tolosa-Hunt syndrome: MRI appearances. *Journal of medical imaging and radiation oncology* 2008;52:447-51.
- Seth T. Stalcup. Intracranial Causes of Ophthalmoplegia: The Visual Reflex Pathways. RSNA, 2013 • radiographics.rsna.or
- Lee A.G., Hayman L.A., Ross A.W. Neuroimaging contrast agents in ophthalmology. *Surv Ophthalmol.* 2000;45(3):237–253.
- Kaiser, Peter. MD., Friedman, Neil. MD., Pineda, Roberto. MD. Third cranial nerve palsy. *The Massachusetts eye and ear infirmiry Illustrated manual of Ophthalmology.* 2nd edition. P. 39-41
- Arteaga, A. P., & Goyal, J. (Eds.). (2009). *Instant Clinical Diagnosis in Ophthalmology, Neuro-Ophthalmology.* New Delhi: Jaypee Brothers Medical Publishers.
- Kanski, J. (2011). *Clinical Ophthalmology: A systematic approach, 7th Edition.* Elsevier.
- Karna, S. (2006). *Step by Step, Neuro-Ophthalmology: Clinical Examination and Diagnosis.* New Delhi: Jaypee Brothers Medical Publishers.
- Lee, A., & Brazis, P. (2003). *Clinical Pathways in Neuro-Ophthalmology: An Evidence Based Approach.* Thieme.

- Schiefer, U., Wilhelm, H., & Hart, W. (Eds.). (2007). *Clinical Neuro-Ophthalmology: A practical Guide*. Springer.
- Mukherjee, P. (2010). *Essentials of Neuro-Ophthalmology*. New Delhi: Jaypee Brothers Medical Publishers.
- Trobe, J. D. (2008). *Rapid Diagnosis in Ophthalmology, Neuro-Ophthalmology*. Philadelphia: Mosby-Elsevier.
- Yanoff, M., & Duker, J. (2014). *Ophthalmology, 4th Edition*. Saunders-Elsevier.
- Thurtell, M., Tomsak, R., & Daroff, R. (2012). *Neuro-Ophthalmology*. New York: Oxford University
- Bruce BB, Biousse V, Newman NJ. Third nerve palsies. *Semin Neurol*. 2007;27(3):257–68. doi: 10.1055/s-2007-979681.
- El Mansouri Y, Zaghloul K, Amraoui A. Oculomotor paralyses in the course of diabetes--concerning 12 cases. *J Fr Ophtalmol*. 2000;23(1):14–8.
- Richards BW, Jones FR, Younge BR. Causes and prognosis in 4,278 cases of paralysis of the oculomotor, trochlear, and abducens cranial nerves. *Am J Ophthalmol*. 1992;113(5):489–96. doi: 10.1016/S0002-9394(14)74718-X.
- Watanabe K, Hagura R, Akanuma Y, et al. Characteristics of cranial nerve palsies in diabetic patients. *Diabetes Res ClinPract*. 1990;10(1):19–27. doi: 10.1016/0168-8227(90)90077-7.
- Boulton AJ, Arezzo JC, Lamik RA, Sosenko JM. Diabetic somatic neuropathies. *Diabetes Care* 2004, 27: 1458-86
- Al Saleh M, Bosley TM. Microvascular cranial nerve palsies in an Arabic population. *J Neuroophthalmol*. 1999;19(4):252–6.
- Chebel S, Bouatay AB, Ammar M, Ben-Yahia S, Khairallah M, Ayed MF. Diabetes mellitus-associated ocular motor nerve palsies. *Neurosciences (Riyadh)* 2009;14(4):386–8.
- Kanda T. Biology of the blood–nerve barrier and its alteration in immune mediated neuropathies. *J Neurol Neurosurg Psychiatry* 2013;84: 208–212
- Asbury AK, Algredege H, Hershberg R, Miller Fischer C. Oculomotor palsy in diabetes mellitus: a clinico-pathological study. *Brain* 1970;93:555–566

- Dreyfus PM, Hakim S, Adams RD. Diabetic ophthalmoplegia; report of case, with postmortem study and comments on vascular supply of human oculomotor nerve. *AMA Arch Neurol Psychiatry* 1957;77:337–349
- Weber RB, Daroff RB, Mackey EA. Pathology of oculomotor nerve palsy in diabetes. *Neurology* 1970;20:835–838
- Goldstein, J. E., & Cogan, D. G. Diabetic Ophthalmoplegia with Special Reference to the Pupil. *Archives of Ophthalmology*, 1960. 64(4), 592–600.
- Galtrey CM, Schon F, Nitkunan A. Microvascular non-arteritic ocular motor nerve palsies-what we know and how should we treat? *Neuroophthalmology*. 2015;39:1–11.
- Cahill M, Bannigan J, Eustace P. Anatomy of the extraneural blood supply to the intracranial oculomotor nerve. *Br J Ophthalmol* 1996;80:177–181
- Krisht A, Barnett DW, Barrow DL, Bonner G. The blood supply of the intracavernous cranial nerves: an anatomic study. *Neurosurgery* 1994;34:275–279
- Kalofoutis C, Piperi C, Kalofoutis A, Harris F, Phoenix D, Singh J. Type II diabetes mellitus and cardiovascular risk factors: Current therapeutic approaches. *Exp Clin Cardiol*. 2007;12:17–28.
- Krentz AJ, Clough G, Byrne CD. Interactions between microvascular and macrovascular disease in diabetes: Pathophysiology and therapeutic implications. *Diabetes Obes Metab*. 2007;9:781–91.
- Al-Wakeel JS, Hammad D, Al Suwaida A, Mitwalli AH, Memon NA, Sulimani F. Microvascular and macrovascular complications in diabetic nephropathy patients referred to nephrology clinic. *Saudi J Kidney Dis Transpl*. 2009;20:77–85.
- Matheus AS, Gomes MB. Early aggressive macrovascular disease and type 1 diabetes mellitus without chronic complications: A case report. *BMC Res Notes*. 2013;6:222.
- Orasanu G, Plutzky J. The pathologic continuum of diabetic vascular disease. *J Am Coll Cardiol*. 2009;53(5 Suppl):S35–42.
- Dhume KU, Paul KE. Incidence of pupillary involvement, course of anisocoria and ophthalmoplegia in diabetic oculomotor nerve palsy. *Indian J Ophthalmol* 2013;61:13–17

- Tamhankar MA, Biousse V, Ying GS, Prasad S, Subramanian PS, Lee MS, Eggenberger E, Moss HE, Pineles S, Bennett J, Osborne B, Volpe NJ, Liu GT, Bruce BB, Newman NJ, Galetta SL, Balcer LJ. Isolated third, fourth, and sixth cranial nerve palsies from presumed microvascular versus other causes: a prospective study. *Ophthalmology* 2013;120:2264–2269
- Capó H, Warren F, Kupersmith MJ. Evolution of oculomotor nerve palsies. *J Clin Neuroophthalmol* 1992;12:21–25
- Wilker SC, Rucker JC, Newman NJ, Biousse V, Tomsak RL. Pain in ischaemic ocular motor cranial nerve palsies. *Br J Ophthalmol* 2009;93:1657–1659
- Sunderland S, Hughes ES. The pupillo-constrictor pathway and the nerves to the ocular muscles in man. *Brain* 1946; 69:301–309
- Sanders S, Kawasaki A, Purvin VA. Patterns of extraocular muscle weakness in vasculopathic pupil-sparing, incomplete third nerve palsy. *J Neuroophthalmol* 2001;21:256–259
- Jacobson DM. Progressive ophthalmoplegia with acute ischemic abducens nerve palsies. *Am J Ophthalmol* 1996;122:278–279
- Jacobson, D. M. . Risk Factors for Ischemic Ocular Motor Nerve Palsies. *Archives of Ophthalmology*, 1994;112(7), 961.
- Richards, B. W., Jones, F. R., & Younge, B. R. (1992). Causes and Prognosis in 4,278 Cases of Paralysis of the Oculomotor, Trochlear, and Abducens Cranial Nerves. *American Journal of Ophthalmology*, 113(5), 489–496.
- Akagi T, Miyamoto K, Kashii S, Yoshimura N. Cause and prognosis of neurologically isolated third, fourth, or sixth cranial nerve dysfunction in cases of oculomotor palsy. *Jpn J Ophthalmol* 2008;52:32–35
- Comer RM, Dawson E, Plant G, Acheson JF, Lee JP. Causes and outcomes for patients presenting with diplopia to an eye casualty department. *Eye (Lond)* 2007;21:413–418
- Trigler L, Siatkowski RM, Oster AS, et al. Retinopathy in patients with diabetic ophthalmoplegia. *Ophthalmology*. 2003;110(8):1545–50
- Green WR, Hackett ER, Schlezinger NS. Neuro-ophthalmologic evaluation of oculomotor nerve paralysis. *Arch Ophthalmol*. 1964;72: 154–167.
- Shrader EC, Schlezinger NS. Neuroophthalmologic evaluation of abducens nerve paralysis. *Arch Ophthalmol*. 1960;63:84–91.

- Al Kahtani ES, Khandekar R, Al-Rubeaan K, Youssef AM, Ibrahim HM, Al-Sharqawi AH. Assessment of the prevalence and risk factors of ophthalmoplegia among diabetic patients in a large national diabetes registry cohort. *BMC Ophthalmol.* 2016;16:118. Published 2016 Jul 22. doi:10.1186/s12886-016-0272-7
- Greco D, Gambina F, Maggio F. Ophthalmoplegia in diabetes mellitus: a retrospective study. *Acta Diabetol.* 2009;46(1):23–6. doi: 10.1007/s00592-008-0053-8.
- Lazzaroni F, Laffi GL, Galuppi V, Scorolli L. Paralysis of oculomotor nerves in diabetes mellitus. A retrospective study of 44 cases. *Rev Neurol (Paris).* 1993;149(10):571–3
- Azarmina M, Azarmina H. The six syndromes of the sixth cranial nerve. *J Ophthalmic Vis Res.* 2013;8(2):160–71
- Acaroglu G, Akinci A, Zilelioglu O: Retinopathy in patients with diabetic ophthalmoplegia. *Ophthalmologica* 2008, 222(4):225–228.
- Zrustova M, Vrabec F, Rostlapil J: Diabetic changes of the extra-ocular muscles in man. *Acta Diabetol Lat* 1979; 16: 55–62.
- Shih M-H, Huang F-C, Tsai R-K. Ischemic ophthalmoplegia in diabetic mellitus. *Neuro-Ophthalmology.* 2002;26(3):181–91
- Noh KM, Lee JC, Ahn YH, Hong SH, Koh JY. Insulin-induced oxidative neuronal injury in cortical culture: mediation by induced N-methyl-Daspartate receptors. *IUBMB Life.* 1999;48(3):263–9.
- Patel SV, Holmes JM, Hodge DO, Burke JP. Diabetes and hypertension in isolated sixth nerve palsy: a population-based study. *Ophthalmology.* 2005;112(5):760–3



KEMENTERIAN RISET, TEKNOLOGI DAN PENDIDIKAN TINGGI
UNIVERSITAS HASANUDDIN
FAKULTAS KEDOKTERAN
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KOMITE ETIK PENELITIAN KESEHATAN

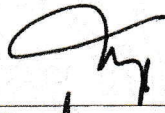

Sekretariat : Lantai 3 Gedung Laboratorium Terpadu
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REKOMENDASI PERSETUJUAN ETIK

Nomor : 438/UN4.6.4.5.31/ PP36/ 2019

Tanggal: 14 Juni 2019

Dengan ini Menyatakan bahwa Protokol dan Dokumen yang Berhubungan Dengan Protokol berikut ini telah mendapatkan Persetujuan Etik :

| | | | |
|--|--|---|------------------------------|
| No Protokol | UH19050298 | No Sponsor | |
| Peneliti Utama | dr. Ganesa Wardana | Protokol | |
| Judul Peneliti | Faktor Resiko Oftalmoplegia Pada Diabetes Melitus | | |
| No Versi Protokol | 1 | Tanggal Versi | 17 Mei 2019 |
| No Versi PSP | 1 | Tanggal Versi | 17 Mei 2019 |
| Tempat Penelitian | RS Universitas Hasanuddin Makassar | | |
| Jenis Review | <input type="checkbox"/> Exempted <input checked="" type="checkbox"/> Expedited <input type="checkbox"/> Fullboard Tanggal | Masa Berlaku 14 Juni 2019 sampai 14 Juni 2020 | Frekuensi review lanjutan |
| Wakil Ketua Komisi Etik Penelitian | Nama Prof.Dr.dr. Suryani As'ad, M.Sc.,Sp.GK (K) | Tanda tangan  | |
| Sekretaris Komisi Etik Penelitian | Nama dr. Agussalim Bukhari, M.Med.,Ph.D.,Sp.GK (K) | Tanda tangan  | |

Kewajiban Peneliti Utama:

- Menyerahkan Amandemen Protokol untuk persetujuan sebelum di implementasikan
- Menyerahkan Laporan SAE ke Komisi Etik dalam 24 Jam dan dilengkapi dalam 7 hari dan Laporan SUSAR dalam 72 Jam setelah Peneliti Utama menerima laporan
- Menyerahkan Laporan Kemajuan (progress report) setiap 6 bulan untuk penelitian resiko tinggi dan setiap setahun untuk penelitian resiko rendah
- Menyerahkan laporan akhir setelah Penelitian berakhir
- Melaporkan penyimpangan dari protokol yang disetujui (protocol deviation / violation)
- Mematuhi semua peraturan yang ditentukan



KEMENTERIAN RISET, TEKNOLOGI DAN PENDIDIKAN TINGGI

KOMITE ETIK PENELITIAN KESEHATAN

Fakultas Kedokteran Universitas Hasanuddin

RSPTN Universitas Hasanuddin

RSUP dr. Wahidin Sudirohusodo Makassar

Sekretariat : Lantai 2 Gedung Laboratorium Terpadu FKUH

PERINTIS KEMERDEKAAN KAMPUS TAMALANREA KM.10, MAKASSAR 90245

Contact Person: dr. Agussalim Bukhari, M.Med, Ph.D, Sp.GK 081241850858

e-mail:agussalimbukhari@yahoo.com

Lampiran 1.

NASKAH PENJELASAN PADA SUBYEK

Faktor Resiko Oftalmoplegia pada Diabetes Melitus

Assalamualaikum Wr. Wb/ Selamat pagi bapak/ ibu/ saudara(i), Saya Ganesa Wardana dari bagian Ilmu Kesehatan Mata Unhas. Kami bermaksud untuk melakukan penelitian mengenai hubungan faktor resiko (usia, gender, tipe dan durasi penyakit serta ada atau tidaknya penyakit penyerta) pada pasien Diabetes Melitus, dengan terjadinya oftalmoplegia diabetik. Kami melakukan penelitian ini karena komplikasi neuropati yang menyebabkan oftalmoplegia merupakan salah satu dari komplikasi terbanyak dari Diabetes Melitus. Mekanisme yang menyebabkan komplikasi diabetes Melitus ini melibatkan beberapa faktor resiko. Meskipun penelitian tentang faktor resiko oftalmoplegia pada pasien diabetes telah banyak dilakukan pada negara-negara maju, namun data mengenai oftalmoplegia diabetes belum pernah dilakukan di Makassar. Karenanya, kami terdorong untuk mengevaluasi adanya faktor-faktor resiko yang ada pada pasien diabetes yang dapat menyebabkan terjadinya oftalmoplegia. Diharapkan dengan penelitian ini, selain menurunkan indeks gula darah, faktor resiko lain juga dapat diantisipasi untuk mencegah terjadinya oftalmoplegia diabetik.

Pemeriksaan yang dilakukan merupakan bagian dari pemeriksaan rutin di poliklinik Endokrin. Semua pasien yang terdiagnosa Diabetes Melitus, dilakukan pencatatan data yang dikumpulkan dari adalah: jenis kelamin, usia, ketajaman visual, jenis dan durasi DM, adanya penyakit penyerta: hipertensi, hyperlipidemia dan penyakit arteri coroner. Pasien yang memenuhi kriteria inklusi dimasukan sebagai sampel penelitian. Diantara pasien DM yang mempunyai gejala oftalmoplegia atau pengelihatn ganda (diplopia) akan dilakukan pemeriksaan tambahan di poliklinik mata. Data tambahan yang diperiksa yaitu saraf kranial yang terlibat, tanggal onset kelumpuhan saraf kranial, gejala awal, terutama adanya rasa sakit/ nyeri, frekuensi dan lateralitas

kelumpuhan saraf kranial, kehadiran keterlibatan pupil pada parese saraf kranial III, dan waktu untuk terjadinya resolusi kelumpuhan. Semua data yang didapat dimasukkan ke dalam tabel, untuk selanjutnya dilakukan analisa statistik untuk mengetahui hubungan faktor resiko pada pasien Diabetes Melitus dengan terjadinya oftalmoplegia diabetik.

Kami sangat mengharapkan kesediaan Bapak/Ibu untuk dapat ikut serta dalam penelitian ini. Penelitian ini bersifat sukarela tanpa ada kompensasi maupun paksaan, sehingga bapak/ibu sekalian dapat menolak untuk ikut dalam penelitian ini. Bapak/Ibu juga dapat menolak atau mengundurkan diri dari penelitian ini kapan saja jika terdapat hal-hal yang tidak berkenaan terhadap bapak/ibu dan tidak akan dikenakan sanksi apapun. Pengunduran diri tersebut tidak akan mengurangi perubahan mutu pelayanan dari dokter.

Bila masih ada hal-hal yang ingin Bapak/Ibu ketahui, maka Bapak/Ibu dapat bertanya atau meminta penjelasan pada kami di Bagian Ilmu Kesehatan Mata RS UNHAS, atau secara langsung melalui nomor telepon saya: dr. Ganesa Wradana, 08115443436

Semua data dari penelitian ini akan dicatat dan dipublikasikan tanpa membuka data pribadi pasien dan jika akan dipublikasi, kami akan meminta persetujuan dari Bapak/Ibu. Data pada penelitian ini akan dikumpulkan dan disimpan dalam *file* manual dan elektronik, diaudit dan diproses serta dipresentasikan pada:

- Forum ilmiah Departemen Ilmu Kesehatan Mata, FK - Universitas Hasanuddin
- Publikasi pada jurnal ilmiah dalam negeri

Bila bapak/ibu setuju maka kami berharap bapak/ibu menandatangani surat persetujuan setelah mengikuti penjelasan ini.

Atas kesediaan dan kerjasamanya kami sampaikan terima kasih.

Identitas Peneliti

Nama : Ganesa Wardana

Alamat : BTN Hamsi Blok P no 7 Jl.Perintis kemerdekaan III, Tamalanrea Makassar

Hp : 08115443436

DISETUJUI OLEH KOMISI
PENELITIAN KESEHATAN
FAKULTAS KEDOKTERAN UNHAS
TGL..... 2019



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JL. PERINTIS KEMERDEKAAN KAMPUS TAMALANREA KM.10, MAKASSAR 90245
Contact Person: dr. Agussalim Bukhari, M.Med, Ph.D, Sp.GK 081241850858
e-mail:agussalimbukhari@yahoo.com

Lampiran 2.

FORMULIR PERSETUJUAN

Saya yang bertanda tangan di bawah ini :

Nama : Umur :
tahun
Alamat :
Telepon/HP :

Menyatakan bersedia untuk berpartisipasi pada penelitian ini yang berjudul :

“Faktor Resiko Oftalmoplegia pada Diabetes Melitus “

setelah mendengar/membaca dan mengerti penjelasan yang diberikan mengenai tujuan dan manfaat yang akan didapatkan pada penelitian ini, khususnya bagi kemajuan ilmu kedokteran.

Makassar,

Saksi I

Saksi II

(.....)

. (.....)

| No | Nama | RM | jenis kelamin | | Usia | Parese | | Jenis Parese | | | Visus | | Jenis DM | | durasi DM (tahun) | HT | Dislipid | CAD | RD | ket |
|----|---------------------|--------|---------------|-----------|------|--------|-------|--------------|------|------|--------|--------|----------|---------|----------------------|----|----------|-----|----|---------------|
| | | | Perempuan | Laki-laki | | Ya | Tidak | N III | N IV | N VI | od | os | type I | type II | | | | | | |
| 1 | ronawati | 105710 | 1 | 0 | 60 | 1 | 0 | 0 | 0 | 1 | 20/100 | 20/80 | 0 | 1 | 10 | 1 | 0 | 0 | 0 | |
| 2 | Nichwan | 117306 | 0 | 1 | 32 | 1 | 0 | 0 | 0 | 1 | 20/30 | 20/30 | 0 | 1 | 12 | 0 | 0 | 0 | 1 | |
| 3 | A. Tenri jaya | 101071 | 1 | 0 | 46 | 1 | 0 | 0 | 0 | 1 | 20/60 | 20/40 | 0 | 1 | 10 | 0 | 0 | 0 | 0 | |
| 4 | Satyla | 101716 | 1 | 0 | 50 | 1 | 0 | 1 | 0 | 0 | 20/40 | 20/60 | 0 | 1 | 10 | 0 | 0 | 0 | 0 | ct dbn |
| 5 | Nur Thita | 103921 | 1 | 0 | 24 | 1 | 0 | 0 | 0 | 1 | 20/60 | 20/60 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| 6 | Kursiah | 111111 | 1 | 0 | 25 | 1 | 0 | 0 | 0 | 1 | 20/20 | 20/20 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| 7 | Rudy Ferdy Gosal | 106530 | 0 | 1 | 34 | 1 | 0 | 0 | 0 | 1 | 20/20 | 20/20 | 0 | 1 | 13 | 1 | 0 | 0 | 0 | |
| 8 | Nursiah | 100892 | 1 | 0 | 48 | 1 | 0 | 0 | 0 | 1 | 20/200 | 20/200 | 0 | 1 | 5 | 1 | 1 | 0 | 0 | |
| 9 | muh. Tahir | 111638 | 0 | 1 | 63 | 1 | 0 | 0 | 0 | 1 | 20/20 | 20/20 | 0 | 1 | 5 | 1 | 0 | 0 | 0 | |
| 10 | Mariati | 112544 | 0 | 1 | 26 | 1 | 0 | 0 | 0 | 1 | 20/20 | 20/20 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| 11 | Sulfadi | 47055 | 0 | 1 | 54 | 0 | 1 | 0 | 0 | 0 | 20/40 | 20/30 | 0 | 1 | 9 | 0 | 0 | 0 | 0 | |
| 12 | Sri susyanti | 12193 | 1 | 0 | 55 | 0 | 1 | 0 | 0 | 0 | 20/30 | 20/30 | 0 | 1 | 15 | 0 | 1 | 0 | 0 | |
| 13 | Herianti | 14531 | 1 | 0 | 37 | 0 | 1 | 0 | 0 | 0 | 20/20 | 20/20 | 0 | 1 | 6 | 0 | 0 | 0 | 0 | neuropati + |
| 14 | Muttiara | 19485 | 1 | 0 | 59 | 0 | 1 | 0 | 0 | 0 | 20/60 | 20/60 | 0 | 1 | 13 | 1 | 1 | 0 | 0 | |
| 15 | H. Lagiono | 29281 | 0 | 1 | 63 | 0 | 1 | 0 | 0 | 0 | 20/200 | 20/200 | 0 | 1 | 5 | 1 | 0 | 0 | 0 | |
| 16 | Karsa Eka Lolo | 56874 | 0 | 1 | 40 | 0 | 1 | 0 | 0 | 0 | 20/20 | 20/20 | 0 | 1 | 4 | 1 | 1 | 1 | 0 | kaki diabetik |
| 17 | Rohana Toding | 58461 | 1 | 0 | 55 | 0 | 1 | 0 | 0 | 0 | 20/60 | 20/40 | 0 | 1 | 3 | 1 | 0 | 0 | 0 | |
| 18 | Hj. A. Munirah s | 36678 | 1 | 0 | 57 | 0 | 1 | 0 | 0 | 0 | 20/60 | 20/60 | 0 | 1 | 15 | 1 | 1 | 1 | 0 | |
| 19 | Deby Farah diba | 53370 | 1 | 0 | 38 | 0 | 1 | 0 | 0 | 0 | 20/20 | 20/20 | 0 | 1 | 10 | 0 | 1 | 0 | 0 | |
| 20 | St. Aisyah Abubakar | 48519 | 1 | 0 | 71 | 0 | 1 | 0 | 0 | 0 | 20/200 | 20/200 | 0 | 1 | 20 | 1 | 1 | 1 | 0 | |
| 21 | Lastari | 55521 | 1 | 0 | 72 | 0 | 1 | 0 | 0 | 0 | 20/400 | 20/400 | 0 | 1 | 4 | 1 | 0 | 0 | 0 | |
| 22 | Siti Nurbaya | 31087 | 1 | 0 | 58 | 0 | 1 | 0 | 0 | 0 | 20/60 | 20/60 | 0 | 1 | 4 | 1 | 1 | 0 | 0 | |
| 23 | drs. Musatar | 39787 | 0 | 1 | 61 | 0 | 1 | 0 | 0 | 0 | 20/100 | 20/100 | 0 | 1 | 10 | 1 | 1 | 1 | 0 | |
| 24 | Rugaya manggala | 51876 | 1 | 0 | 64 | 0 | 1 | 0 | 0 | 0 | 20/40 | 20/40 | 0 | 1 | 10 | 1 | 1 | 0 | 0 | ckd |
| 25 | Sitti sulfangru | 6097 | 1 | 0 | 49 | 0 | 1 | 0 | 0 | 0 | 20/40 | 20/40 | 0 | 1 | 10 | 0 | 0 | 0 | 0 | |
| 26 | muliana nasir | 10430 | 1 | 0 | 54 | 0 | 1 | 0 | 0 | 0 | 20/100 | 20/60 | 0 | 1 | 15 | 0 | 0 | 0 | 0 | |
| 27 | H. Galib sjamsi | 91775 | 0 | 1 | 79 | 0 | 1 | 0 | 0 | 0 | 20/400 | 20/400 | 0 | 1 | 17 | 1 | 1 | 1 | 0 | |
| 28 | Fatimah | 92069 | 1 | 0 | 74 | 0 | 1 | 0 | 0 | 0 | 20/200 | 20/400 | 0 | 1 | 10 | 1 | 0 | 0 | 0 | riw.stroke |
| 29 | m. Arfa | 94502 | 0 | 1 | 17 | 0 | 1 | 0 | 0 | 0 | 20/20 | 20/20 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| 30 | H. Saini | 108255 | 0 | 1 | 59 | 0 | 1 | 0 | 0 | 0 | 20/30 | 20/30 | 0 | 1 | 11 | 0 | 0 | 0 | 0 | nefropati |
| 31 | Namri | 110119 | 1 | 0 | 65 | 0 | 1 | 0 | 0 | 0 | 20/200 | 20/200 | 0 | 1 | 6 | 1 | 0 | 1 | 0 | |
| 32 | wardah | 110251 | 1 | 0 | 56 | 0 | 1 | 0 | 0 | 0 | 20/100 | 20/60 | 0 | 1 | 10 | 0 | 0 | 0 | 0 | |
| 33 | Ahmad munir | 110464 | 0 | 1 | 50 | 0 | 1 | 0 | 0 | 0 | 20/40 | 20/40 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | |
| 34 | drs. H. Nurding | 110536 | 0 | 1 | 63 | 0 | 1 | 0 | 0 | 0 | 20/200 | 20/200 | 0 | 1 | 10 | 1 | 1 | 1 | 0 | |
| 35 | Risma | 65436 | 1 | 0 | 35 | 0 | 1 | 0 | 0 | 0 | 20/20 | 20/20 | 0 | 1 | 8 | 0 | 0 | 0 | 0 | neuropati + |
| 36 | Baharuddin | 109282 | 0 | 1 | 60 | 0 | 1 | 0 | 0 | 0 | 20/60 | 20/40 | 0 | 1 | 10 | 1 | 1 | 0 | 0 | |
| 37 | Dahlia | 109391 | 1 | 0 | 51 | 0 | 1 | 0 | 0 | 0 | 20/40 | 20/40 | 0 | 1 | 5 | 0 | 0 | 0 | 0 | |
| 38 | Rahmatia | 86601 | 1 | 0 | 57 | 0 | 1 | 0 | 0 | 0 | 20/60 | 20/40 | 0 | 1 | 15 | 0 | 0 | 0 | 0 | neuropati + |
| 39 | Irene Intan | 85545 | 1 | 0 | 48 | 0 | 1 | 0 | 0 | 0 | 20/400 | 1/300 | 0 | 1 | 13 | 1 | 0 | 0 | 1 | |
| 40 | Yunius Mohubu | 101140 | 0 | 1 | 60 | 0 | 1 | 0 | 0 | 0 | 20/30 | 20/30 | 0 | 1 | 10 | 0 | 0 | 0 | 0 | |
| 41 | Alim Usman | 99488 | 0 | 1 | 47 | 0 | 1 | 0 | 0 | 0 | 20/30 | 20/30 | 0 | 1 | 5 | 0 | 0 | 0 | 0 | |
| 42 | Benawaty | 101010 | 1 | 0 | 58 | 0 | 1 | 0 | 0 | 0 | 20/40 | 20/40 | 0 | 1 | 10 | 0 | 0 | 0 | 0 | |
| 43 | ir. Amrani samad | 99953 | 0 | 1 | 54 | 0 | 1 | 0 | 0 | 0 | 20/30 | 20/40 | 0 | 1 | 15 | 1 | 1 | 1 | 0 | |
| 44 | Naima | 81488 | 1 | 0 | 54 | 0 | 1 | 0 | 0 | 0 | 20/30 | 20/30 | 0 | 1 | 10 | 1 | 0 | 0 | 0 | |
| 45 | Djuriyah Adam | 91867 | 1 | 0 | 64 | 0 | 1 | 0 | 0 | 0 | 20/200 | 20/200 | 0 | 1 | 10 | 0 | 0 | 0 | 0 | |
| 46 | P. Sudirman | 78232 | 0 | 1 | 57 | 0 | 1 | 0 | 0 | 0 | 20/400 | 20/200 | 0 | 1 | 20 | 1 | 1 | 1 | 1 | ckd |
| 47 | drs. Abd. Rahman | 108870 | 0 | 1 | 53 | 0 | 1 | 0 | 0 | 0 | 20/200 | 20/200 | 0 | 1 | 7 | 1 | 0 | 0 | 0 | |
| 48 | Dg. Nampo | 107113 | 0 | 1 | 54 | 0 | 1 | 0 | 0 | 0 | 20/60 | 20/40 | 0 | 1 | 10 | 0 | 0 | 0 | 0 | |
| 49 | Kamsiah | 107192 | 1 | 0 | 53 | 0 | 1 | 0 | 0 | 0 | 20/30 | 20/30 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| 50 | usman | 106739 | 0 | 1 | 49 | 0 | 1 | 0 | 0 | 0 | 20/30 | 20/30 | 0 | 1 | 10 | 0 | 0 | 0 | 0 | |
| 51 | A. Roki | 74968 | 1 | 0 | 64 | 0 | 1 | 0 | 0 | 0 | 20/60 | 20/60 | 0 | 1 | 5 | 1 | 1 | 0 | 0 | |
| 52 | Asnawati | 104632 | 1 | 0 | 53 | 0 | 1 | 0 | 0 | 0 | 20/40 | 20/40 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | |
| 53 | Sirajuddin | 105482 | 0 | 1 | 58 | 0 | 1 | 0 | 0 | 0 | 20/100 | 20/60 | 0 | 1 | 10 | 0 | 0 | 0 | 0 | neuropati + |

| | | | | | | | | | | | | | | | | | | | | |
|----|------------------|--------|----|----|----|----|----|---|---|---|--------|--------|---|----|----|----|----|----|---|--|
| 54 | murida dg sangka | 111538 | 1 | 0 | 56 | 1 | 0 | 1 | 0 | 0 | 20/100 | 20/200 | 0 | 1 | 10 | 0 | 1 | 0 | 0 | |
| 55 | Irwan | 112728 | 0 | 1 | 35 | 1 | 0 | 1 | 1 | 0 | 20/20 | 20/20 | 0 | 1 | 5 | 0 | 0 | 0 | 0 | |
| n | | | 32 | 23 | | 12 | 43 | 3 | 1 | 9 | | | 1 | 54 | | 26 | 17 | 10 | 3 | |

n Sampel: 55
Perempuan: 32
Laki-laki: 23
n Parese: 12 usia >50: 4 usia <50: 8 Perempuan 7 Laki-laki 5 >10th: 6 <10th: 6
n tidak parese 43
parese N III 3
parese N IV 1
parese N VI 9
Parese multiple 1
DM tipe I 1
DM tipe II 54
HT 26
Dislipidemia 17
CAD 10
Retinopati 3
Durasi DM >10th 33
Durasi DM <10th 22
Usia >50th 38
Usia <50th 17

Parese DM >10th 6
Parese DM <10th 6

parese+HT 4
parese+dislipid 2
parese+CAD 0
parese+RD 1