

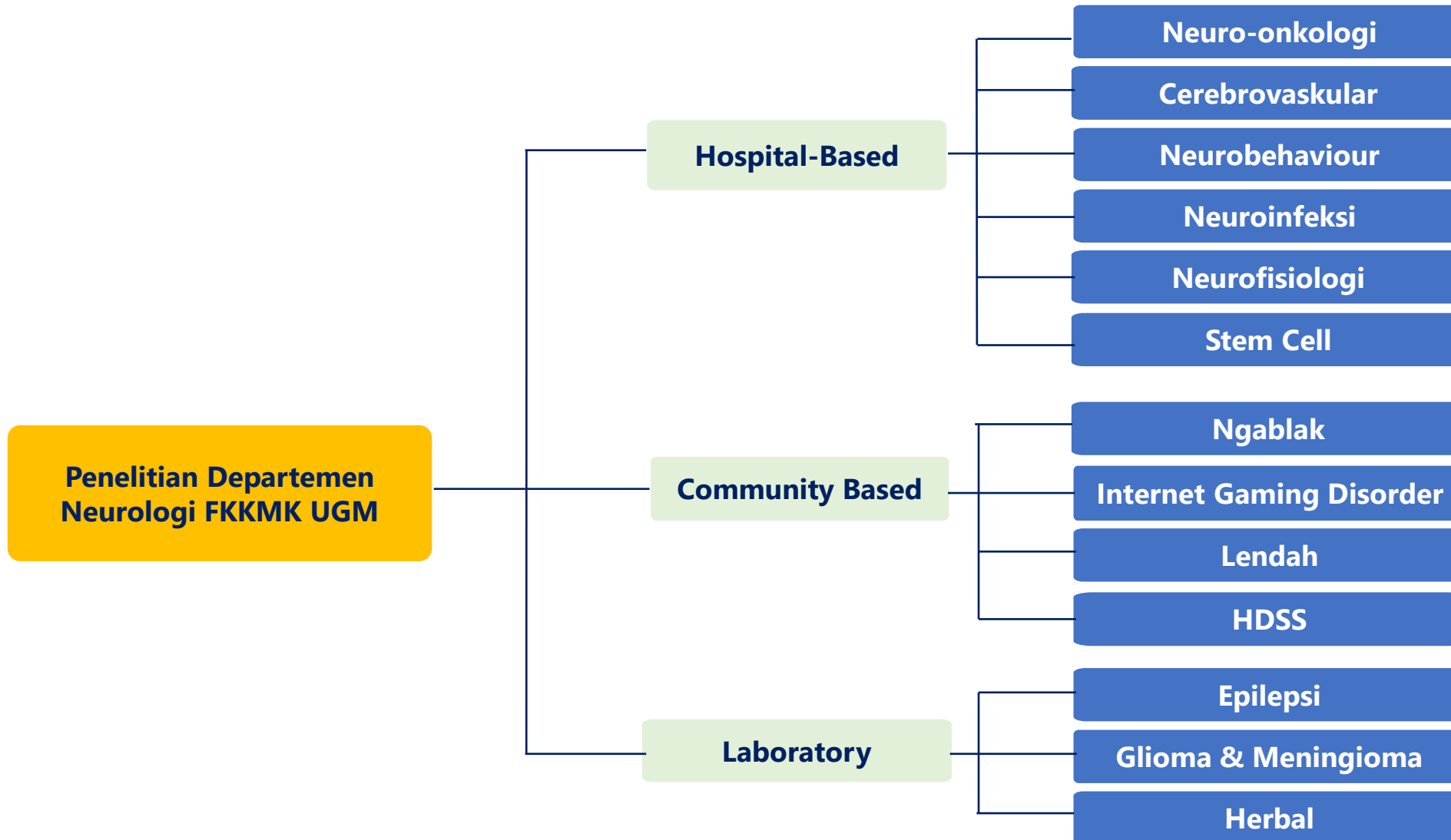


UNIVERSITAS
GADJAH MADA

Penelitian Departemen Neurologi FK-KMK UGM

Ismail Setyopranoto
Rusdy Ghazali Malueka

**Departemen Neurologi Fakultas Kedokteran, Kesehatan
Masyarakat dan Keperawatan Universitas Gadjah Mada**



Penelitian Hospital-Based



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No	Divisi	Judul Penelitian	Koordinator	Keterangan
1.	Neuro-onkologi	<i>Hospital-Survey</i> data pasien tumor otak di Daerah Istimewa Yogyakarta	dr. Rusdy Ghazali Malueka, Ph.D, Sp.S(K)	Sedang berlangsung
2.	Cerebrovaskular	Efek Pemberian Kopi pada Pasien Stroke Pasca Fase Akut	Dr. dr. Ismail Setyopranoto, Sp.S(K)	Sedang berlangsung
		Hubungan Nutrisi sebagai Faktor Risiko Kejadian Stroke di Sleman : Studi Berbasis HDSS	Dr. dr. Ismail Setyopranoto, Sp.S(K)	Sedang berlangsung
		<i>Care Pathway</i> Pelayanan Homecare pada Pasien Stroke Iskemik Paska Akut	dr. Paryono, Sp.S(K)	Sudah selesai
		Hubungan Status Glikemik dengan Luaran Stroke di RSUP Dr. Sardjito	dr. Abdul Gofir, Sp.S(K)	Sudah selesai
		Efektivitas Sediaan Ekstrak Centella Asiatica dan Ekstrak Kunyit untuk Memperbaiki Fungsi Kognitif	dr. Abdul Gofir, Sp.S(K)	Sedang berlangsung
3	Neurobehaviour	Karakteristik Sosiodemografi dan Klinis Pasien Demensia serta Identifikasi Kebutuhan dan Kendala Caregiver	Dr. dr. Astuti, Sp.S(K)	Sudah selesai
		<i>White Matter Lesion and Their Neuropsychological Correspondence using Data from COSMIC</i>	dr. Amelia Nur Vidyanti, Ph.D, Sp.S(K)	Sedang berlangsung
		Prediksi Potensi COVID-19 melalui Algoritma Machine Learning Pelaporan Gejala Mandiri: Studi Validasi	dr. Amelia Nur Vidyanti, Ph.D, Sp.S(K)	Sedang berlangsung

Penelitian Hospital-Based



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No	Divisi	Judul Penelitian	Koordinator	Keterangan
4.	Neurofisiologi	Hubungan Diabetic Autonomic Neuropathy terhadap mortalitas pasien stroke	Dr. dr. Ahmad Asmedi, M.Kes, Sp.S(K)	Sedang berlangsung
		Gambaran elektrofisiologi pada pasien anak dengan ALL	dr. Yudiyanta, Sp.S(K)	Sedang berlangsung
5.	Neuroinfeksi	Rasio hs-CRP/albumin sebagai prediktor luaran klinis pada pasien infeksi sistem saraf pusat	dr. Sekar Satiti, Sp.S(K)	Sedang berlangsung
		<i>Improving Diagnosis of Brain Infections in Indonesia Using Novel and Established Molecular Diagnostic Tools.</i>	dr. Sekar Satiti, Sp.S(K)	Sedang berlangsung
		Uji Diagnostik Modified twites score dalam mendiagnosis meningitis tb	dr. Sekar Satiti, Sp.S(K)	Sedang berlangsung
6	Stem Cell	Uji Klinis Pemberian Sel Punca Mesenkimal Sumsum Tulang & Asal Tali Pusat pada pasien dengan Cidera Medula Spinalis	dr. Rusdy Ghazali Malueka, Ph.D, Sp.S(K)	Sedang berlangsung
		Uji Klinis Pemberian Sel Punca Mesenkimal Sumsum Tulang & Asal Tali Pusat pada pasien dengan Osteoarthritis	dr. Rusdy Ghazali Malueka, Ph.D, Sp.S(K)	Sedang berlangsung
		Uji Klinis Sel Punca Normoaxic asal Tali Pusat sebagai Adjuvan Terapi Standar pada Pasien COVID-19 Derajat Berat	Prof. Dr. dr. Samekto Wibowo, P.Far.K, Sp.FK(K), Sp.S(K)	Sedang berlangsung



Penelitian Community-Based

No	Divisi	Judul Penelitian	Koordinator	Keterangan
1	Ngablak	Identifikasi permasalahan kesehatan terkait paparan pestisida pada petani	dr. Rusdy Ghazali Malueka, Ph.D, Sp.S(K)	Sudah selesai
		Upaya Pencegahan dan Pengelolaan Penderita Stunting Secara Terpadu di Masa Transisi Adaptasi Kebiasaan Baru COVID-19 di Kecamatan Ngablak, Kabupaten Magelang, Jawa Tengah	Prof. Dr. dr. Sri Sutarni, Sp.S(K) Dr. dr. Ismail Setyopranoto, Sp.S(K)	Rencana tahun 2021
		Identifikasi Faktor Risiko dan Pengaruh Stunting dalam Kesehatan Fisik dan Mental Keluarga di Kecamatan Ngablak, Kabupaten Magelang, Jawa Tengah	Prof. Dr. dr. Sri Sutarni, Sp.S(K) Dr. dr. Ismail Setyopranoto, Sp.S(K)	Rencana tahun 2021
2.	Lendah	Pengaruh Pemberian Asam Folat terhadap Fungsi Kognitif pada Pekerja Batik yang Terpapar Logam Berat di Kecamatan Lendah, Kabupaten Kulo Progo, DIY	Prof. Dr. dr. Sri Sutarni, Sp.S(K) Dr. dr. Cempaka Thursina, Sp.S(K)	Sedang berlangsung
		Gambaran ENMG pada Pembatik di Kecamatan Lendah	Dr. dr. Cempaka Thursina, Sp.S(K)	Sedang berlangsung
3.	Internet-Gaming Disorder	Profil Demografi Internet-Gaming Disorder pada Siswa SD di Yogyakarta	Dr. dr. Cempaka Thursina, Sp.S(K)	Sedang berlangsung
		Koherensi qEEG pada Internet Gaming Disorder	Dr. dr. Ahmad Asmedi, M.Kes, Sp.S(K)	Sedang berlangsung
4.	HDSS	Hubungan Nutrisi sebagai Faktor Risiko Kejadian Stroke di Sleman : Studi Berbasis HDSS	Dr. dr. Ismail Setyopranoto, Sp.S(K)	Sedang berlangsung



Penelitian Laboratorium & Studi Hewan

No	Divisi	Judul Penelitian	Koordinator	Keterangan
1	Neuro-onkologi	Identifikasi karakteristik Molekular dan Prognosis pada Pasien Glioma di Yogyakarta	dr. Rusdy Ghazali Malueka, Ph.D, Sp.S(K)	Sedang berlangsung
		Identifikasi karakteristik Molekular dan Prognosis pada Pasien Meningioma di Yogyakarta	dr. Rusdy Ghazali Malueka, Ph.D, Sp.S(K)	Sedang berlangsung
2	Epilepsi	Hubungan Polimorfisme SCN1A dan Respon Obat Fenitoin pada Pasien Epilepsi	dr. Atitya Fithri Khairani, M.Sc, Sp.S	Sedang berlangsung
3	Herbal	Uji Farmakologis sediaan ekstrak yang mengandung pegagan (<i>Centella asiatica</i>) dan ekstrak kunyit (<i>Curcuma longa</i>) untuk memperbaiki fungsi kognitif pada tikus wistar model stroke	dr. Abdul Gofir, Sp.S(K)	Sedang berlangsung



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Pengaruh Paparan **Pestisida** Terhadap Kesehatan **Saraf, Mata Dan Kulit** Pada Petani Di Kecamatan **Ngablak**, Kabupaten Magelang, Jawa Tengah

LOCALLY ROOTED, GLOBALLY RESPECTED



- Ketua Peneliti: dr. Rusdy Ghazali Malueka, Ph.D, Sp.S(K)
- Berlangsung tahun 2017-2019
- Departemen yang terlibat:
 - Departemen Neurologi
 - Departemen Ilmu Kesehatan Mata
 - Departemen Gizi Kesehatan
 - Departemen Patologi Anatomi
 - Departemen Dermatologi dan Venereologi
 - Departemen Orthopaedi dan Traumatologi



- Metode:

- Desain *cross sectional*

- Variabel bebas

Derajat keracunan pestisida berdasarkan kadar cholinesterase, ureum dan kreatinine

- Variabel dependen

- Hubungan cholinesterase dengan nyeri kepala; vertigo; insomnia; penurunan saturasi oksigen dan derajat kelelahan
- Tingkat keparahan neuropati berdasarkan ENMG, EEG, dan P300
- Skrining kesehatan mata dan pengetahuan zat beracun
- Gangguan alergi kulit akibat paparan pestisida



Scientific Foundation SPIROSKI, Skopje, Republic of Macedonia
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e-ISSN: 1857-9655
Category: E - Public Health
Section: Public Health Disease Control



OPEN ACCESS

The Association between Pesticide Exposure and Neurological Signs and Symptoms in Farmers in Magelang District, Central Java, Indonesia

Ismail Setyopranoto¹, Ibnu Widya Argo¹, Aulia Fitri Ramadhani¹, Ery Kus Dwianingsih², Whisnu Nalendra Tama¹, Abdul Gofir¹, Cempaka Thursina Srie Setyaningrum¹, Andre Stefanus Panggabean¹, Sri Sutarni¹, Rusdy Ghazali Malueka^{1*}

¹Department of Neurology, Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada, Dr. Sardjito General Hospital, Yogyakarta, Indonesia; ²Department of Anatomical Pathology, Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada, Dr Sardjito General Hospital, Yogyakarta, Indonesia

Abstract

BACKGROUND: Excessive use of pesticides is known to cause neurotoxicity. Chronic effects of pesticide poisoning include neuropathy and tremor.

AIM: This study aimed to determine the association between pesticide exposure and the occurrence of neurological signs and symptoms, especially neuropathy and tremor, in farmers.

METHODS: This was a cross-sectional study. The study location was Seloprojo Village, Ngablak District, Magelang Regency, Central Java Province. Farmers as subjects were recruited to determine neuropathy using Diabetic Neuropathy Symptom (DNS) and Diabetic Neuropathy Examination (DNE) scoring. Tremor events were measured with Tremor Rating Scale (TRS). Cholinesterase levels were examined using venous blood samples to determine the level of pesticide poisoning.

RESULTS: Of the 120 farmers studied, 68.3% experienced pesticide poisoning with cholinesterase levels below normal values. Weakness of the upper limb was found in 10 subjects (8.33%), while weakness of the lower limbs was found in 5 subjects (5%). There were 59.2% farmers who met the neuropathy criteria from the DNS score and those who met the neuropathic criteria from the DNE score were 6.7%. Tremor symptoms were found in 71.7% of the farmers. There was no significant association between cholinesterase levels and DNS score ($p = 0.737$), but there were significantly lower levels of cholinesterase ($p = 0.046$) in the neuropathy group measured with DNE score. There was no significant association between cholinesterase levels and TRS ($p = 0.204$).

CONCLUSION: Cholinesterase levels were significantly associated with neuropathy incidence measured with DNE criteria but statistically not related to tremors in farmers exposed to pesticides.

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e-ISSN: 1857-9655
Category: E - Public Health
Section: Public Health Disease Control



OPEN ACCESS

Blood Cholinesterase Level is Associated with Cognitive Function in Indonesian School-age Children Exposed to Pesticides

Rusdy Ghazali Malueka^{1*}, Andrianor Rahman¹, Ery Kus Dwianingsih², Andre Stefanus Panggabean¹, Halwan Fuad Bayuanga¹, Sarasliti Alifaningdyah¹, Meutia Rizki Innayah¹, Sri Awalia Febriana¹, Indarwati Setyaningsih¹, Cempaka Thursina Srie Setyaningrum¹, Abdul Gofir¹, Sri Sutarni¹, Ismail Setyopranoto¹

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Abstract

BACKGROUND: Pesticides are known as depressors of acetylcholinesterase (AChE) activity, resulting in the nervous system toxicity. The previous studies have described associations between AChE, a stable marker of pesticide poisoning, and cognitive performance in children.

AIM: This study aimed to identify the association between blood AChE level and cognitive function in children exposed to pesticides in the Magelang Regency, Indonesia.

METHODS: A cross-sectional study involving school-age children with a history of pesticide exposure in Ngablak, Magelang Regency, Central Java, Indonesia, was conducted. Blood AChE level was evaluated, and the Modified Mini-Mental State Examination for Children (MMMSEC) was used to analyze the cognitive function of the children.

RESULTS: In total, 56 subjects aged between 9 and 11 years were included in this study. Median blood AChE level was 9.64 kIU/L, and 24 subjects (42.9%) had low blood AChE levels. Median MMMSEC score was 33. Eleven subjects (19.6%) were found to have abnormal cognitive function. Bivariate analysis showed that blood AChE level was associated with MMMSEC score ($r = 0.343$, $p = 0.010$). Multiple linear regression showed that blood AChE level had a positive association with cognitive function in children, assessed using the MMMSEC score ($\beta = 0.360$, $p = 0.006$). Further analysis showed that the attention and orientation (memory function) domains of the MMMSEC were significantly associated with blood AChE level (β : 0.371 and 0.297, respectively, $p < 0.05$).

CONCLUSIONS: Blood AChE level, a stable marker of pesticide poisoning, was positively associated with cognitive function in children, as assessed with the MMMSEC score. In particular, the orientation and attention domains of the MMMSEC were associated with blood AChE level.

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Keywords: Pesticide exposure; Cholinesterase level; Neuropathy; Tremor
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Funding: This study was supported by a grant from the Indonesian Ministry of Research, Technology and Higher Education, Republic of Indonesia
Competing interests: The authors have declared that no competing interests exist
Open Access: This is an open-access article distributed under the terms of the Creative Commons Attribution NonCommercial 4.0 International License (CC BY-NC 4.0)

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Citation: Malueka RG, Rahman A, Dwianingsih EK, Panggabean AS, Bayuanga HF, Alifaningdyah S, Innayah RZ, Febriana SA, Setyaningsih L, Setyaningrum CTS, Gofir A, Sutarni S, Setyopranoto I. Blood Cholinesterase Level is Associated with Cognitive Function in Indonesian School-age Children Exposed to Pesticides. Open Access Macedonian Journal of Medical Sciences. 2020 Apr 25; 8(E):81-86. https://doi.org/10.3889/oamjms.2020.3985
Keywords: Anti-cholinergic intoxication; Lower extremity weakness; Type 2 diabetes mellitus patients
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Funding: This study was supported by a grant from the Indonesian Ministry of Research, Technology, and Higher Education
Competing interests: The authors have declared that no competing interests exist
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WCN19-1318

Journal of the Neurological Sciences 405S (2019) 104980

Poster Session 3

Blood cholinesterase level is associated with tremor of farmer with pesticide exposure in Indonesia

A. Dyah Kusumawati, S. Sutarni, S. Subagya, I. Setyopranoto, R.G. Malueka
Gadjah Mada University, Neurology, Yogyakarta, Indonesia

Background

Organophosphates and carbamates are among the most commonly used insecticides worldwide and are known to suppress the activity of acetylcholinesterase (AChE) that will result in nervous system toxicity. Previous studies described positive associations between concurrent AChE activity, a stable marker of cholinesterase inhibitor pesticide exposure, with tremor in farmer. This study was aimed to identify association between cholinesterase level with tremor in farmer exposed to pesticide exposure in Magelang Regency, Indonesia.

Methods

This was a cross-sectional study. The subjects were the farmer with history of pesticide exposure in Ngablak, Magelang Regency, Central Java, Indonesia. Cholinesterase level was analyzed from blood. Tremor was assessed using Tremor Rating Scale (TRS).

Results

In total, 120 subjects aged average 45.8 ± 13.43 years old were included. The average of blood cholinesterase level was 8.73 ± 1.80 kIU/L, with 70 subjects had low level of blood cholinesterase and 86 subjects had tremor. Bivariate analysis showed that blood cholinesterase level was associated with tremor ($p = 0.005$; 95% CI = 1.39-7.23). Further analysis showed that cholinesterase level was associated with tremor of arm ($p = 0.02$; 95% CI = 1.58-6.88)

Conclusions

Blood cholinesterase level, a stable marker of cholinesterase inhibitor pesticide exposure, was positively associated with tremor in farmer as assessed by TRS, especially tremor of arm.

Keywords: Pesticide exposure, Cholinesterase level, Tremor



Pemeriksaan ENMG

Skrining Kesehatan Mata



Dokumentasi





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Hubungan Profil Molekuler Dengan Gambaran Klinis, Histopatologis Dan Prognosis **Glioma** Di Indonesia

LOCALLY ROOTED, GLOBALLY RESPECTED



- Ketua Peneliti: dr. Rusdy Ghazali Malueka, Ph.D, Sp.S(K)
- Berlangsung tahun 2017- sekarang
- Hingga saat ini didapatkan 131 sampel



- Metode:
 - Desain *cross sectional*
 - DNA genomik diekstraksi dari sampel FFPE dan jaringan segar
 - Sampel jaringan segar diperoleh dari RSUP Dr.Sardjito dan RS PKU Muhammadiyah Yogyakarta
 - Profil molekuler yang diteliti:
 - Mutasi gen IDH1/2 (*sequencing*)
 - Status metilasi gen MGMT (*PCR*)
 - Ekspresi gen IDH, EGFR, VEGF, dan TP53 (*IHK*)
 - Ekspresi Panel mikro-RNA : **miR-21**, miR128, miR-132, miR-134, miR-7, miR-10b, miR-137, miR-222, miR-34a, miR-155, miR-210 dan miR409-5p (*qPCR*)
 - Data demografis, klinis, histopatologis diperoleh dari RM

of DLBCL. These changes were new and not present on prior imaging. Family opted for palliative management with no biopsy or post-mortem being undertaken.

Objective: To evaluate the incidence of depression as a presenting symptom of intracranial lymphoma.

Patients and Methods/Material and Methods: Literature review in Embase and Medline databases to evaluate the incidence of depression as a presenting symptom of both primary and secondary intracranial lymphoma.

Results: There were 3 reported cases of depression as the presenting symptom of Primary Lymphoma. An article describing 248 cases of Primary CNS Lymphoma identified neuropsychiatric symptoms in 43% of newly diagnosed patients, as a presenting symptom, however we were unable to find a reported incidence of depressive symptoms specifically.

1071

WCN17-2418

SHIFT 2 - NEUROONCOLOGY

Correlation between grading and IDH1 mutation in Indonesian glioma

E.K. Dwianingsih¹, F. no surname², R.G. Bawono³, A.F. Rhamadanti H.F. Bayuangga⁴, R.G. Malueka⁵, ¹Faculty of Medicine Gadjah Mac University, Anatomical Pathology, Yogyakarta, Indonesia; ²Faculty of Medicine Gadjah Mada University, Neurology, Yogyakarta, Indonesia

Background: Glioma is the most common primary brain tumor originally arise from glial cells. In Indonesia, other than surgery, other therapy has not yet been developed. Thus, glioma patients show high therapy resistancy and recurrency. Isositrat dehydrogenase (IDH)

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catalyzes decarboxylation of isositrat to alfa-ketoglutarat. IDH1 mutations were found in 70–80% glioma grade II, III and secondary glioblastoma multiforme (GBM). It is related to better prognosis and eligibility of IDH1 inhibitor administration.

Objective: This study is performed to elaborate glioma profile of IDH1 mutation status in Indonesia for better therapy approach.

Patients and Methods/Material and Methods: Fifty glioma patients in Sardjito Hospital who underwent surgery were recruited. Paraffin tissue blocks of glioma were sliced for hematoxylin eosin staining and immunohistochemical examination of Ki67 and IDH1. Data was statistically analyzed using SPSS.

Results: Among recruited patients, patients age is ranging from 1 to 68 years old, and male slightly dominates with ratio 1.17:1. Based on HE and Ki67 staining, glioma grade 2 are 32% (16/50), grade 4 26% (13/50), grade 3 22% (11/50) and grade 1 20% (10/50), respectively. In glioma grade 1, 30% (3/10) patients show positif IDH1 mutation. Glioma grade 2, 3 and 4 have 87.5% (14/16), 100% (11/11) and 69.2% (9/13) IDH1 mutations, respectively. Histopathological grading and IDH1 mutation status exhibits significant correlation ($p < 0.005$). In total, 74% (37/50) patients possess IDH1 mutation.

Conclusion: IDH1 mutations are highly identified in Indonesian glioma patients and significantly correlated with grading. This elaborates more insight in application of targeted therapy IDH1 inhibitor in glioma patients in Indonesia.

doi:10.1016/j.jns.2017.08.3306

with a cut-off point LCP >102.9, sensitivity of 100 and a specificity 23.3. Demyelinating diseases sensitivity of 83.3 and specificity of 61 **Conclusion:** The pIRM is a useful diagnostic method for LCP with cutoff >102 per pIRM with a sensitivity of 100 and 95.09 specify it is an option in difficult cases or multiple comorbidities patient difficult cases.

doi:10.1016/j.jns.2017.08.3307

1073

WCN17-3441

SHIFT 2 - NEUROONCOLOGY

Headache in brain tumors

A. Gonzalez-Aguilar¹, K. Centelles², J. Santos Zambrano³, V. Guer Juarez⁴, M. Lopez Martinez⁵, J. Avendaño⁶, ¹National Institute Neurology and Neurosurgery, Emergencies department, Mexico, Me ²National Institute of Neurology and Neurosurgery, Neurosur, department, Mexico, Mexico

Background: Headache is one of the most frequent symptom Brain Tumors (BT), but there is no typical pattern.

Objective: To characterize the clinical aspects of headache in patients with a BT.

Correlate the type of headache with specific BT.

Patients and Methods/Material and Methods: A search was made

RESEARCH ARTICLE

Editorial Process: Submission:04/20/2020 Acceptance:08/04/2020

Clinicopathological Features and Prognosis of Indonesian Patients with Gliomas with *IDH* Mutation: Insights into Its Significance in a Southeast Asian Population

Rusdy Ghazali Malueka^{1*}, Ery Kus Dwianingsih², Halwan Fuad Bayuangga¹, Andre Stefanus Panggabean¹, Ibnu Widya Argo¹, Aditya Dwi Donurizki¹, Sabillal Shaleh¹, Adiguno Suryo Wicaksono³, Kusumo Dananjoyo¹, Ahmad Asmedi¹, Rachmat Andi Hartanto³

Abstract

Background: Gliomas remain one of the most common primary brain tumors. Mutations in the isocitrate dehydrogenase (*IDH*) gene are associated with a distinct set of clinicopathological profiles. However, the distribution and significance of these mutations have never been studied in the Indonesian population. This study aimed to elucidate the association between *IDH* mutations and clinicopathological as well as prognostic profiles of Indonesian patients with gliomas. **Methods:** In total, 106 patients with gliomas were recruited from a tertiary academic medical center in Yogyakarta, Indonesia. Formalin-fixed paraffin-embedded and fresh tissue specimens were obtained and sectioned for hematoxylin-eosin staining and immunohistochemical examinations. Genomic DNA was isolated and analyzed for the presence of *IDH* mutations using standard polymerase chain reaction and nucleotide sequencing methods. Clinicopathological data were collected from medical records. **Results:** Although no *IDH2* mutation was identified, *IDH1* mutations were found in 23 (21.7%) of the patients. Patients with *IDH1* mutations tended to have a history of smoking and a shorter interval between onset of symptoms and initial surgical interventions. Frontal lobe involvement, oligodendroglial histology, lower Ki67 expression, WHO grades II and III gliomas, and methylated O6-methylguanine-DNA methyltransferase (MGMT) promoters were significantly associated with the presence of *IDH1* mutations. Compared with patients with *IDH1*-wild-type, patients with *IDH1* mutation were observed to have a longer overall survival. **Conclusions:** *IDH1* mutations are associated with certain clinicopathological and prognostic profiles in Indonesian patients with gliomas. This finding demonstrates the importance of identifying *IDH* mutations as part of the management of patients with glioma in Indonesia.

Keywords: *IDH*- glioma- clinicopathological features- prognosis- Indonesia

Asian Pac J Cancer Prev, **21** (8), 2287-2295



DOI:10.31557/APJCP.2020.21.4.1063
Association between Ki-67 and Glioma Grading

RESEARCH ARTICLE

Editorial Process: Submission:11/22/2019 Acceptance:04/02/2020

Association between Ki-67 Labeling index and Histopathological Grading of Glioma in Indonesian Population

Emilia Theresia¹, Rusdy Ghazali Malueka², Sofia Pranacipta¹, Bidari Kameswari³, Kusumo Dananjoyo², Ahmad Asmedi², Adiguno Suryo Wicaksono⁴, Rahmat Andi Hartanto⁴, Ery Kus Dwianingsih^{1*}

Abstract

Background: Gliomas are the most frequent primary brain tumors. According to World Health Organization guidelines, gliomas are graded into four groups (Group I-IV). This histological grading will determine prognosis and treatment of the patient. Morphological criteria are not always accurate. Tumor proliferation index is a potent quantitative marker for tumor behavior and prognosis, also it's the basis of gliomagenesis. Ki-67 immunohistochemistry examination for determining proliferation index has been suggested as an ancillary marker in deciding the definitive grading of glioma. **Objective:** To analyze the correlation between Ki-67 labeling index and histopathological grading of glioma in Indonesian population. **Methods:** One hundred and six formalin fixed-paraffin embedded tissue of glioma patients were collected from 4 different hospitals. Expression of *Ki-67* was detected using immunohistochemistry staining and the labeling index was counted. The association between Ki-67 labeling index and histopathological grading was analyzed. **Results:** Age range of patient were 1-73-years old, with male predominance (55.70%). Glioblastoma was the most common diagnosis accounting for 41.51% of all samples. Ki-67 labeling index cut point of 6.35% was obtained and significantly sensitive and specific for determining low- or high-grade glioma ($p < 0.001$). **Conclusion:** A significant association between Ki-67 labeling index and histopathological grading in Indonesian glioma patients has been revealed. The result of this study may be used to improve diagnostic and grading accuracy of glioma cases in Indonesia, especially in small biopsy specimens.

Keywords: Ki-67- labeling index- glioma- grading- Indonesia

Asian Pac J Cancer Prev, **21** (4), 1063-1068

WCN19-1497

Journal of the Neurological Sciences 405S (2019) 104070

Free papers 22 - Miscellaneous 2

Association of IDH1 mutation with survival of glioma patients in Indonesia

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Background

Glioma is one of the most common primary brain tumors in adults. Nowadays, glioma classification has been changed from morphology based to molecular-based classification. One of the most important molecular biomarkers for glioma is isocitrate dehydrogenase (IDH) mutation. IDH1 C.395G>A (R132H) mutation has been shown to be associated with better overall survival in glioma patients. However, this has never been studied in the Indonesian population. This study was performed to identify the association between IDH1 mutation and overall survival of glioma patients in Indonesia.

Method

In total, 103 glioma patients in Yogyakarta, Indonesia were recruited. Glioma tissues in the form of paraffin tissue blocks or fresh samples were sliced for hematoxylin-eosin staining and immunohistochemical examination. Genomic DNA was extracted from the samples, and IDH1 mutation status was analyzed by PCR and nucleotide sequencing. The survival distributions were estimated using the Kaplan-Meier method and compared among the patient subsets using log-rank tests.

Result

IDH1 C.395G>A (R132H) mutations were detected in 22 (21.4%) of the samples. Median overall survival of patients with IDH1 R132H mutation is significantly longer than patients with wild type IDH1 gene (43.8 ± 1.2 months vs. 11.1 ± 3.3 months respectively, $p = .008$).

Conclusion

In conclusion, IDH1 R132H mutation is frequently found in Indonesian glioma, and associated with longer overall survival.

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Seizure in Glioma

RESEARCH ARTICLE

Editorial Process: Submission:03/05/2020 Acceptance:03/22/2021

Seizure in Indonesian Glioma Patients: Associated Risk Factors and Impact on Survival

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Abstract

Objective: Seizure is commonly found in patients with glioma. This study aimed to find risk factors for seizures in Indonesian patients with glioma. We also sought to determine the association between seizure and survival in this patient population. **Methods:** Patients with glioma were enrolled from the Dr. Sardjito General Hospital and other hospitals in Yogyakarta Province, Indonesia. Detailed demographic and clinical data were collected from medical records. DNA extraction and polymerase chain reaction (PCR) were performed to detect *IDH1* mutation. Tumor tissue samples were stained by hematoxylin-eosin and classified according to the 2016 World Health Organization (WHO) classification of central nervous system (CNS) tumors. Expression of *Ki-67* was detected by immunohistochemistry staining. Survival data were also collected. **Results:** In total, 107 patients were included in the analysis. Age, gender, history of smoking, tumor side, tumor grade, *Ki-67* expression, and *IDH1* mutation were not associated with seizure. Tumors involving the frontal lobe ($p=0.037$) and oligodendroglioma histology ($p=0.031$) were associated with the development of seizures in this study. However, multivariate analysis showed that only oligodendroglioma histology was associated with seizure [$p=0.032$, odds ratio (OR) = 4.77, 95% confidence interval (CI) = 1.146-19.822]. Patients with seizures have significantly longer median overall survival than patients without seizures (69.3±25.01 vs. 10.6±6.14 months, respectively, $p=0.04$). **Conclusion:** This study showed that seizure in patients with glioma in Indonesia is associated with frontal lobe location and oligodendroglioma histology. Patients with seizures also have significantly longer overall survival.

Keywords: Glioma- seizure- risk factors- survival

Asian Pac J Cancer Prev, 22 (3), 691-697

DOI:10.31557/APJCP.2020.21.11.3229
Detection of IDH1 Mutations in Gliomas

RESEARCH ARTICLE

Editorial Process: Submission:05/31/2020 Acceptance:11/20/2020

Comparison of Polymerase Chain Reaction–Restriction Fragment Length Polymorphism, Immunohistochemistry, and DNA Sequencing for the Detection of *IDH1* Mutations in Gliomas

Rusdy Ghazali Malueka¹, Emilia Theresia², Fitria Fitria², Ibnu Widya Argo¹, Aditya Dwi Donurizki¹, Sabillal Shaleh¹, Meutia Rizki Innayah¹, Adiguno Suryo Wicaksono³, Kusumo Dananjoyo¹, Ahmad Asmedi¹, Rachmat Andi Hartanto³, Ery Kus Dwianingsih^{2*}

Abstract

Background: *IDH1* mutation shows diagnostic, prognostic, and predictive value in gliomas. Direct Sanger sequencing is considered the gold standard to detect *IDH1* mutation. However, this technology is not available in most neuropathological centers in developing countries such as Indonesia. Immunohistochemistry (IHC) and polymerase chain reaction–restriction fragment length polymorphism (PCR–RFLP) have also been used to detect *IDH1* mutation. This study aimed to compare DNA sequencing, IHC, and PCR–RFLP in detecting *IDH1* mutations in gliomas. **Methods:** Research subjects were recruited from Dr. Sardjito Hospital. Genomic DNA was extracted from fresh or formalin-fixed paraffin-embedded samples of tumor tissue. DNA sequencing, PCR–RFLP and IHC were performed to detect *IDH1* mutation. Sensitivity, specificity, and accuracy of PCR–RFLP and IHC were calculated by comparing them to DNA sequencing as the gold standard. **Results:** Among 61 recruited patients, 13 (21.3%) of them carried a mutation in codon 132 of the *IDH1* gene, as shown by DNA sequencing. PCR–RFLP and DNA sequencing have a concordance value of 100%. Meanwhile, the concordance value between *IDH1* R132H IHC and DNA sequencing was 96.7%. The sensitivity, specificity, positive predictive values, negative predictive values, and accuracy for PCR–RFLP were all 100%. On the other hand, the sensitivity, specificity, and accuracy of IHC were 92.3%, 97.9%, and 96.7%, respectively. **Conclusion:** This study showed that both PCR–RFLP and IHC have high accuracy in detecting *IDH1* mutation. We recommend a combination of PCR–RFLP and IHC to detect *IDH1* mutation in resource-limited settings.

Keywords: Glioma, *IDH1* gene- DNA sequencing- PCR–RFLP- immunohistochemistry

Asian Pac J Cancer Prev, 21 (11), 3229-3234





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GADJAH MADA

Profil Demografis, Klinis, Radiologis Dan Histopatologis **Tumor Otak** Di Yogyakarta Pada Tahun 2016-2019

LOCALLY ROOTED, GLOBALLY RESPECTED



- Ketua Peneliti: dr. Rusdy Ghazali Malueka, Ph.D, Sp.S(K)
- Berlangsung tahun 2020- sekarang
- Data demografis, klinis, radiologis dan histopatologis diperoleh dari RM di beberapa RS di Yogyakarta:
 - RSUP Dr. Sardjito
 - RS Panti Rapih
 - RSPAU Hardjolukito
 - RS Bethesda
 - RS JIH
 - RS PKU Muhammadiyah
- Pengambilan data sudah dilaksanakan, diperoleh total 758 data tumor otak primer dan metastasis





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Identifikasi Karakteristik Molekular **Meningioma** Di Indonesia Dan Hubungannya Dengan Gambaran Klinis, Radiologis, Histopatologis, Dan Prognosis Pasien

LOCALLY ROOTED, GLOBALLY RESPECTED



- Ketua Peneliti: dr. Rusdy Ghazali Malueka, Ph.D, Sp.S(K)
- Berlangsung tahun 2018- sekarang
- Metode:
 - Desain *cross sectional*
 - DNA genomik diekstraksi dari sampel FFPE
 - Profil molekuler yang diteliti:
 - Mutasi gen AKT1 (p.E17K), KLF4 (p.K409Q), SMO (p.L412F dan p.W535L) (*sequencing*)
 - Ekspresi NF2, Ki-67, MIB-1, p53, PR, MMP-9, dan VEGF (*IHK, real time-PCR*)
 - Data demografis, klinis, histopatologis diperoleh dari RM
- Saat ini dalam proses pengambilan data





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Faktor yang mempengaruhi mild cognitive impairment pada lansia di Yogyakarta

LOCALLY ROOTED, GLOBALLY RESPECTED




ugm.ac.id



- Ketua Peneliti: dr. Amelia Nur Vidyanti, Sp.S(K), Ph.D
- Berlangsung tahun 2016-2018
- Pihak yang terlibat:
 - Departemen Saraf FKKMK UGM
 - HDSS Sleman
- Metode:
 - Desain *cross-sectional*
 - Identifikasi faktor-faktor yang secara signifikan berpengaruh terhadap kejadian *mild cognitive impairment* pada lansia di Yogyakarta
 - Pengambilan data dilakukan langsung pada masyarakat lansia yang aksesnya disediakan oleh tim HDSS

Article

Obesity Is Less Frequently Associated with Cognitive Impairment in Elderly Individuals: A Cross-Sectional Study in Yogyakarta, Indonesia

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Received: 23 December 2019; Accepted: 27 January 2020; Published: 30 January 2020



Abstract: Obesity is one of the factors associated with cognitive impairment. However, obesity may differently affect cognitive function in different age groups, and scarce data are available from low- and middle-income countries. This cross-sectional study aimed to identify the association between obesity and cognitive impairment among 143 elderly individuals in Yogyakarta. We recorded the sociodemographic factors and some comorbidities, also measured the body mass index as a parameter of obesity, cognitive function using Montreal Cognitive Assessment—Indonesia, mood condition and depression status using geriatric depression scale-short form, as well as the daily life function using Activity of Daily Living and Instrumental Activity of Daily Living. After adjustment for the sociodemographic and comorbidities, we found that subjects with older age were more likely to have cognitive impairment (odds ratio [OR] 3.544, 95%CI: 1.36–9.22, $p < 0.01$) and compared with elderly individuals with normal weight, obese elderly individuals were 40% less likely to have cognitive impairment (OR 0.604, 95%CI: 0.39–0.95, $p < 0.05$). This study suggests that obesity in elderly individuals is less frequently associated with cognitive impairment. These findings support the reverse causation mechanism related to body mass index (BMI) and cognitive impairment in low/middle-income countries.





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Identifikasi efek antiplatelet dalam menurunkan kejadian major adverse cardiovascular event (MACE) pada pasien stroke iskemik

LOCALLY ROOTED, GLOBALLY RESPECTED



- Ketua Peneliti: dr. Amelia Nur Vidyanti, Sp.S(K), Ph.D
- Berlangsung tahun 2018-2019
- Pihak yang terlibat:
 - Departemen Saraf FKKMK UGM
 - Department of Neurology and Stroke Center, Shuang-Ho Hospital, Taiwan
 - Department of Neurology, College of Medicine, Taipei Medical University, Taiwan



- Metode:
 - Desain kohort retrospektif
 - Identifikasi pasien iskemik stroke dari database asuransi kesehatan Taiwan sejak tahun 2000-2012 yang mengkonsumsi aspirin atau clopidogrel selama minimal 1 tahun
 - *Outcome*-nya adalah kejadian MACE dalam 1 tahun sejak penggunaan antiplatelet yang meliputi stroke rekuren, infark miokard akut, dan kematian.



RESEARCH ARTICLE

Aspirin better than clopidogrel on major adverse cardiovascular events reduction after ischemic stroke: A retrospective nationwide cohort study

Amelia Nur Vidyanti^{1,2}, Lung Chan^{3,4}, Cheng-Li Lin⁵, Chih-Hsin Muo⁵, Chung Y. Hsu^{6,7}, You-Chia Chen^{4,8}, Dean Wu^{4,9}, Chaur-Jong Hu^{3,4,8,10*}

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OPEN ACCESS

Citation: Vidyanti AN, Chan L, Lin C-L, Muo C-H, Hsu CY, Chen Y-C, et al. (2019) Aspirin better than clopidogrel on major adverse cardiovascular events reduction after ischemic stroke: A retrospective nationwide cohort study. PLoS ONE 14(8): e0221750. <https://doi.org/10.1371/journal.pone.0221750>

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Data Availability Statement: All relevant data are within the manuscript.

Abstract

Background

Several clinical trials reported that clopidogrel was superior to aspirin in secondary stroke prevention by reducing the risk of major adverse cardiovascular events (MACE). We aimed to compare the efficacy of clopidogrel with aspirin in reducing one-year risk of MACE based on real-world evidence from Taiwan Health Insurance Database.

Methods

We identified ischemic stroke patients between 2000 and 2012 who took aspirin or clopidogrel within 7 days of stroke onset for 1-year follow-up. The primary outcome was one-year MACE including recurrent stroke, acute myocardial infarction, and death. Propensity score matching and conditional Cox proportional hazards regression were conducted to control the confounding factors.

Results

From 9,089 ischemic stroke patients, we found 654 patients on aspirin and 465 patients on clopidogrel who met the selective inclusion criteria. After propensity score matching, 379 patients were selected from each group. The clopidogrel group had a 1.78-fold MACE risk compared with the aspirin group at one-year follow-up (95% CI = 1.41–2.26, $p < 0.01$). The MACE-free rate in the aspirin group was 15.74% higher than in the clopidogrel group at one-year follow-up. Sub-analysis of the three components of MACE showed that clopidogrel conferred higher risk of recurrent stroke (OR 1.43, 95% CI = 1.06–1.92, $p = 0.02$) and acute





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GADJAH MADA

The Role of HMGB1 and HDAC inhibitor in chronic cerebral hypoperfusion

LOCALLY ROOTED, GLOBALLY RESPECTED



- Peneliti: dr. Amelia Nur Vidyanti, Sp.S(K), Ph.D
- Berlangsung tahun 2016-2020
- Pihak yang terlibat:
 - Departemen Saraf FKKMK UGM
 - Department of Neurology and Stroke Center, Shuang-Ho Hospital, Taiwan
 - Department of Neurology, College of Medicine, Taipei Medical University, Taiwan
 - Taipei Neuroscience Institute



- Metode:
 - Animal study menggunakan model vascular cognitive impairment yang diinduksi dengan chronic cerebral hypoperfusion (CCH)
 - Profil molekuler yang diteliti:
 - Peningkatan protein HMGB1 dalam parenkim otak dan sitokin pro-inflamasinya (TNF- α , IL-1 β , and IL-6) pada kondisi CCH
 - Peningkatan protein BDNF dan asetilasi histon H3K14 & H4K5 pasca pemberian HDAC inhibitor
 - Brain pathology dilihat berdasarkan hasil MRI otak



P00.47

Increased level of HMGB1 induced by chronic cerebral hypoperfusion without evident of amyloid-beta accumulation in an animal model of vascular cognitive impairment

Amelia Nur Vidyanti^{1,2}, Chaur-Jong Hu²

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Vascular cognitive impairment (VCI) refers to all cognitive decline associated with underlying cerebrovascular mechanism. VCI in the most severe form is vascular dementia which contributes to 20% of dementia cases worldwide. VCI is widely associated with chronic cerebral hypoperfusion (CCH). The condition of CCH may cause amyloid accumulation and neuro-inflammation which both play important roles in the pathophysiology. HMGB1 is a non-histone protein that plays role as damaged-associated molecular pattern leading to cascade of inflammation. The increased expression of HMGB1 has been established in acute brain injury cases such as stroke, TBI or in neurodegenerative disease such as Alzheimer's disease. We are trying to explore the expression of HMGB1 in CCH and its association with amyloidogenesis. We performed modified bilateral common carotid artery (BCCAO) surgery for mice to induce CCH that mimics VCI. Increased protein level of HMGB1 was found at 3 months after surgery in cortex, striatum and hippocampus. This correlates with worse performance of behavior test at 3 months in modified-BCCAO mice. Moreover, 7T-MRI image showed hippocampal atrophy. Amyloid PET data showed no significant amyloid-beta accumulation after the surgery, as contrary to previous animal studies. Nevertheless, all these findings show that HMGB1 might be a candidate as therapeutic target in improving the cognitive decline in animal model of VCI.

Article

Role of HMGB1 in an Animal Model of Vascular Cognitive Impairment Induced by Chronic Cerebral Hypoperfusion

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Abstract: The pathophysiology of vascular cognitive impairment (VCI) is associated with chronic cerebral hypoperfusion (CCH). Increased high-mobility group box protein 1 (HMGB1), a nonhistone protein involved in injury and inflammation, has been established in the acute phase of CCH. However, the role of HMGB1 in the chronic phase of CCH remains unclear. We developed a novel animal model of CCH with a modified bilateral common carotid artery occlusion (BCCAO) in C57BL/6 mice. Cerebral blood flow (CBF) reduction, the expression of HMGB1 and its proinflammatory cytokines (tumor necrosis factor-alpha [TNF- α], interleukin [IL]-1 β , and IL-6), and brain pathology were assessed. Furthermore, we evaluated the effect of HMGB1 suppression through bilateral intrahippocampus injection with the CRISPR/Cas9 knockout plasmid. Three months after CCH induction, CBF decreased to 30–50% with significant cognitive decline in BCCAO mice. The 7T-mMRI showed hippocampal atrophy, but amyloid positron imaging tomography showed nonsignificant amyloid-beta accumulation. Increased levels of HMGB1, TNF- α , IL-1 β , and IL-6 were observed 3 months after BCCAO. HMGB1 suppression with CRISPR/Cas9 knockout plasmid restored TNF- α , IL-1 β , and IL-6 and attenuated hippocampal atrophy and cognitive decline. We believe that HMGB1 plays a pivotal role in CCH-induced VCI pathophysiology and can be a potential therapeutic target of VCI.

HDAC inhibitor protects chronic cerebral hypoperfusion and oxygen-glucose deprivation injuries via H3K14 and H4K5 acetylation-mediated BDNF expression

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Funding information: Taipei Medical University, Grant/Award Number: 107TMU-SHH-16 and 108TMU-SHH-12

Abstract

Vascular dementia (VaD) is the second most common cause of dementia, but the treatment is still lacking. Although many studies have reported that histone deacetylase inhibitors (HDACis) confer protective effects against ischemic and hypoxic injuries, their role in VaD is still uncertain. Previous studies shown, one HDACi protected against cognitive decline in animals with chronic cerebral hypoperfusion (CCH). However, the underlying mechanisms remain elusive. In this study, we tested several 10,11-dihydro-5H-dibenzo[b,f]azepine hydroxamates, which act as HDACis in the CCH model (in vivo), and SH-SY5Y (neuroblastoma cells) with oxygen-glucose deprivation (OGD, in vitro). We identified a compound 13, which exhibited the best cell viability under OGD. The compound 13 could increase, in part, the protein levels of brain-derived neurotrophic factor (BDNF). It increased acetylation status on lysine 14 residue of histone 3 (H3K14) and lysine 5 of histone 4 (H4K5). We further clarified which promoters (I, II, III, IV or IX) could be affected by histone acetylation altered by compound 13. The results of chromatin immunoprecipitation and Q-PCR analysis indicate that an increase in H3K14 acetylation leads to an increase in the expression of BDNF promoter II, while an increase in H4K5 acetylation results in an increase in the activity of BDNF promoter II and III. Afterwards, these cause an increase in the expression of BDNF exon II, III and coding exon IX. In summary, the HDACi compound 13 may increase BDNF specific isoforms expression to rescue the ischemic and hypoxic injuries through changes of acetylation on histones.

KEYWORDS

HDAC, histone acetylation, histone deacetylase inhibitor, OGD, vascular dementia



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GADJAH MADA

Pengaruh VEGF dan BDNF pada kejadian gangguan kognitif vaskular pasien stroke iskemik akut

LOCALLY ROOTED, GLOBALLY RESPECTED



- Ketua Peneliti: Dr. dr. Astuti, Sp.S(K)
- Berlangsung tahun 2017-2019
- Metode:
 - Desain kohort prospektif
 - Kadar VEGF dan BDNF diambil pada fase akut pasien stroke iskemik
 - Profil klinis gangguan kognitif diikuti selama 3 bulan

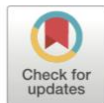
RESEARCH ARTICLE

Higher level of acute serum VEGF and larger infarct volume are more frequently associated with post-stroke cognitive impairment

Astuti Prodjohardjono^{1,2}, Amelia Nur Vidyanti^{2*}, Noor Alia Susianti³, Sudarmanta⁴, Sri Sutarni², Ismail Setyopranoto²

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Abstract

Background

Serum vascular endothelial growth factor (VEGF) and infarct volume detected by brain imaging have been associated with stroke outcome. However, the relationship of these two variables with post-stroke cognitive impairment (PSCI) remains unclear. We aimed to investigate the association between acute serum VEGF levels and infarct volume with PSCI in ischemic stroke patients.

Methods

Fifty-six first-ever ischemic stroke patients who were hospitalized in Dr. Sardjito General Hospital Yogyakarta, Indonesia were prospectively recruited. Serum VEGF level was taken on day 5 of stroke onset and measured by ELISA. Infarct volume was calculated manually from head CT scan by expert radiologist. PSCI was assessed after 3 months follow up by using Montreal Cognitive Assessment-Indonesian version (MoCA-INA). We performed a ROC curve analysis to determine the cut-off point of VEGF level and infarct volume. Multivariate logistic regression analysis was performed to measure the contribution of VEGF level and infarct volume to PSCI after controlling covariates (demographic and clinical data).

Results

The mean age of PSCI and non-PSCI patients was 61.63% ± 8.47 years and 58.67% ± 9.01 years, respectively ($p = 0.221$). No differences observed for vascular risk factors, infarct location, and NIHSS in both groups. Multivariate logistic regression showed that patients with higher VEGF level alone (≥ 519.8 pg/ml) were 4.99 times more likely to have PSCI than those with lower VEGF level (OR = 4.99, 95% CI = 1.01–24.7, $p = 0.048$). In addition, patients with larger infarct volume alone (≥ 0.054 ml) were also more frequently associated with PSCI (OR = 7.71, 95% CI = 1.39–42.91, $p = 0.019$).

Serum Brain-Derived Neurotrophic Factor (BDNF) Level May Predict the Functional Outcome of Acute Ischemic Stroke Patients

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Due to the high prevalence, disability, and cost incurred by acute ischemic stroke, several parameters to predict the functional outcome of stroke have been developed. Brain-Derived Neurotrophic Factor (BDNF) is a protein that plays an important role in neuroplasticity after a stroke attack. Lower BDNF level was associated with increased risk of developing stroke and poor prognostic functional outcome in stroke patients. Here, we measured serum BDNF levels in the acute and chronic phases of acute ischemic stroke patients to see whether the level was changing and affecting the functional outcome. A hospital-based prospective cohort study was conducted in the three largest governmental hospitals in Yogyakarta, Indonesia. Acute ischemic stroke patients were consecutively recruited from June 2018 until July 2019. Serum BDNF level measurements using enzyme-linked immunosorbent assay (ELISA) and functional outcome assessments using Barthel Index (BI) were performed on the 5th and 30th days after stroke onset, representing the acute and chronic phases of stroke, respectively. Sixty-eight patients completed the study and were categorized into dependent ($n=22$) and independent ($n=46$) groups according to BI score on the 30th day after stroke onset. The mean serum BDNF level in the acute phase of the independent group was significantly higher than the dependent group (27,152.28 vs 23,143.41; $p=0.044$). Similar results were also found in the measurement of serum BDNF levels in the chronic phase in which the mean serum BDNF level of the independent group was found to be significantly higher than the dependent group (27,526.48 vs 22,818.91; $p=0.036$). There were no significant changes in the measurement of serum BDNF level between the acute and chronic phases in both dependent and independent groups. Serum BDNF level, either in the acute or chronic phase of stroke onset, may predict the functional outcome of the acute ischemic stroke patients.

Keywords: Brain-derived neurotrophic factor, Functional outcome, Barthel Index, Ischemic stroke.

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Data Availability Statement: All relevant data are within the paper.





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White matter lesions and their neuropsychological correspondence using data from COSMIC

LOCALLY ROOTED, GLOBALLY RESPECTED



- Participating study, kolaborasi dengan Center for Healthy Aging Brain, University of New South Wales, Sydney, Australia sebagai peneliti utama
- Koordinator studi dari Dep Neurologi FKMK UGM: dr. Amelia Nur Vidyanti, Sp.S(K), Ph.D
- Berlangsung tahun 2020-sekarang
- Metode:
 - Desain cross-sectional dan longitudinal
 - Sampel: pasien demensia (Alzheimer/Vaskular/mixed)
 - Analisis gambaran white matter lesion dari MRI (volume dan perubahannya dari waktu ke waktu) dihubungkan dengan data sosiodemografis dan klinis
- Output yang diharapkan: Individu dengan white matter lesion yang ukurannya kecil namun jumlahnya tersebar luas di parenkim otak akan memperlihatkan fungsi kognitif yang lebih buruk daripada individu dengan lesi white matter besar namun jumlahnya sedikit; lesi ini dapat berkembang seiring waktu dan sesuai dengan performa kognitif (severitas demensianya)
- Saat ini dalam proses pengumpulan data



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Prediksi Potensi COVID-19 Melalui Algoritma Machine Learning Pelaporan Gejala Mandiri di RSUP dr. Sardjito : Studi Validasi

LOCALLY ROOTED, GLOBALLY RESPECTED



- Koordinator : dr. Amelia Nur Vidyanti, Sp.S(K), Ph.D
- Berlangsung tahun 2021-sekarang
- Metode:
 - Desain kohort prospektif
 - Menggunakan model prediksi berupa positif ataupun negatif konfirmasi COVID-19 berdasarkan laporan mandiri gejala COVID-19 (anosmia, ageusia, batuk menetap, kelelahan, tidak nafsu makan) oleh subjek penelitian, kemudian divalidasi dengan algoritma machine learning
 - Sampel: Individu yang melakukan tes untuk konfirmasi diagnosis COVID-19 dan tenaga kesehatan yang kontak dengan pasien positif terkonfirmasi COVID-19 di RSUP Dr. Sardjito Yogyakarta
- Bekerja sama dengan Taipei Medical University
- Saat ini dalam proses pengumpulan data



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Terimakasih

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