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HASIL PENILAIAN SEJAWAT SEBIDANG ATAU PEER REVIEW
KARYA ILMIAH : JURNAL ILMIAH

Judul Karya Ilmiah (Artikel) : Clinical manifestation and genetic analysis of familial rare disease genodermatosis xeroderma pigmentosum

Jumlah Penulis : 7 Orang

Status Pengusul : **Renni Yuniati, Nydia Rena Benita Sihombing, Donny Nauphar, Budi Tiawarman, Diah Shinta Kartikasari, Meira Dewi, Sultana MH Faradz**

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- c. Vol, Nomor, halaman : 10 (2), p:114-121
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- e. Penerbit : International Research and Cooperation Association for Bio & Socio-Sciences Advancement
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- i. Terindeks di : Scopus Q3, SJR 0,24
- j. On line turnitin : <https://doc-pak.undip.ac.id/765711/Turnitin-Clinical-manifestation-and-genetic-analysis.pdf>

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Nilai Pengusul =			60% x 39,7 =	23,82

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- b. Ruang lingkup dan kedalaman pembahasan : ruang lingkup sesuai dengan bidang ilmu pengusul yaitu ilmu Dermatologi dengan pemeriksaan biomedik. Pembahasan luas dan dalam tidak hanya klinis, biomedik juga mutasi genetik, dibandingkan dengan hasil penelitian dan laporan kasus terdahulu
- c. Kecukupan dan kemutahiran data/informasi dan metodologi: laporan kasus yang sangat jarang ditemukan telah dijelaskan dengan data mutakhir karena didapat dengan pemeriksaan fisik dan pemeriksaan histopatologi terstandar, serta tehnik sequencing telah di analisis secara genetik adanya mutasi gen
- d. Kelengkapan unsur dan kualitas terbitan/ jurnal: Intractable & Rare Diseases Research Advance Publication, penerbit International Research and Cooperation Association for Bio & Socio-Sciences Advancement, merupaka jurnal Ilmiah Internasional berreputasi, terakreditasi Scopus Q3, SJR 0,24

Semarang, 3 Desember 2021

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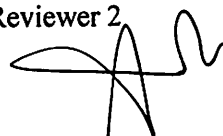
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- Ruang lingkup dan kedalaman pembahasan : Studi kasus tentang Xeroderma pigmentosum (XP), yaitu penyakit resesif autosomal langka yang ditandai dengan hipersensitivitas kulit terhadap radiasi ultraviolet dan agen karsinogenik lainnya. Penelitian sangat sesuai dengan bidang ilmu. Pembahasan mendalam dengan mensitasi 24 pustaka dimana >90% pustaka primer.
- Kecukupan dan kemutahiran data/informasi dan metodologi: Studi kasus serial dengan menyajikan empat kasus dengan XP dari dua keluarga di Indonesia. Pemeriksaan histopatologi menggunakan cytokeratine (CK), CD10, dan pewarnaan Ber-EP4.
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126-130 **Saccharopinuria accompanied by hyperammonemia and hypercitrullinemia presented with elderly-onset epilepsy, progressive cognitive decline, and gait ataxia (/article/2096)**

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136-141 **New insights on fibrodysplasia ossificans progressiva: discussion of an autoptic case report and brief literature review (/article/2098)**

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Intractable Rare Dis Res. 2021; 10(2):136-141.

Saccharopinuria accompanied by hyperammonemia and hypercitrullinemia presented with elderly-onset epilepsy, progressive cognitive decline, and gait ataxia

Ryohei Norioka^{1,*}, Shinsuke Tobisawa¹, Ryusei Nishigori², Tomiko Kuhara³, Masahide Yazaki⁴, Masayoshi Nagao⁵, Toshihiro Ohura⁶, Yasuyuki Takai⁷, Asuka Funai¹, Kazuhito Miyamoto¹, Akihiro Kawata¹, Kazushi Takahashi¹

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⁷Department of Ophthalmology, Juntendo University Urayasu Hospital, Tokyo, Japan.

SUMMARY We report a case of saccharopinuria with hyperammonemia and hypercitrullinemia in a Japanese woman who presented with elderly-onset epilepsy, progressive cognitive decline, and gait ataxia. Blood amino acid analysis revealed an increase in citrulline, cystine, and lysine levels, and urine amino acid analysis showed increased citrulline and cystine levels. Urine metabolomics revealed an increased saccharopine level, leading to the definitive diagnosis of saccharopinuria. In western blots of liver biopsy samples, normal citrin levels were observed, suggesting that adult-onset citrullinemia type 2 (CTLN2) was not present. In addition, decreased argininosuccinate synthetase (ASS) levels were observed, and *ASS1* gene, a causative gene for citrullinemia type 1 (CTLN1), was analyzed, but no gene mutations were found. Because the causes of hypercitrullinemia were not clear, it might be secondary to saccharopinuria. Muscle biopsy findings of the biceps brachii revealed diminished cytochrome c oxidase (COX) activity, mitochondrial abnormalities on electron microscopy and p62-positive structures in immunohistochemical analyses. Saccharopinuria is generally considered a benign metabolic variant, but our case showed elevated lysine and saccharopine levels causing ornithine circuit damage, mitochondrial dysfunction, and autophagy disorders. This may lead to so far unknown neurological disorders.

Keywords saccharopinuria, hyperammonemia, hypercitrullinemia, metabolomics, elderly-onset neurological disorders

1. Introduction

Familial hyperlysinemia is an autosomal recessive disease caused by a defect in the bifunctional alpha-aminoacidic semialdehyde synthase (AASS) protein. AASS includes lysine-ketoglutarate reductase (LKR) and saccharopine dehydrogenase (SD) (1,2). A variant of familial hyperlysinemia, saccharopinuria (hyperlysinemia type II), has been described in which only SD activity was undetectable (3). While saccharopinuria is generally considered a benign metabolic variant, there are some case reports that describe that saccharopinuria exhibits neurological features such as epilepsy and intellectual impairment, and all of these cases were infant-adolescent cases as far as we know (4). On the other

hand, hypercitrullinemia is caused by citrullinemia type 1 (CTLN1) with argininosuccinate synthetase (ASS) deficiency and adult-onset citrullinemia type 2 (CTLN2) with citrin deficiency (5,6). CTLN1 and CTLN2 can cause neurological symptoms such as epilepsy and consciousness disturbance.

Herein, we report a rare case of saccharopinuria complicated with hyperammonemia and hypercitrullinemia presenting epilepsy, progressive cognitive decline, and gait ataxia.

2. Case Report

A 70-year-old woman was admitted to our hospital with a chief complaint of generalized convulsion (Figure 1).

Rituximab use for refractory anti-HMGCR immune-mediated necrotizing myopathy: A case report

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²Department of Rheumatology, Dartmouth-Hitchcock Medical Center, Lebanon, New Hampshire, USA.

SUMMARY Immunosuppression is the cornerstone therapy for anti-3-hydroxy-3-methylglutaryl-coenzyme A reductase (anti-HMGCR) myopathy. Typical immunosuppressants such as corticosteroids, methotrexate, and azathioprine have been used in conjunction with removal of the offending agent, yet the use of rituximab is more limited in this type of myopathy. Reported here is a case of a patient who responded well to rituximab (RTX) after the standard immunosuppressants had failed. This case illustrates the importance of further studies to evaluate the role of RTX in anti-HMGCR myopathy.

Keywords anti-HMGCR, immune-mediated necrotizing myopathy, immunosuppressants, rituximab

1. Introduction

Immune-mediated necrotizing myopathy (IMNM) is an autoimmune condition resulting from the direct or indirect injury of myofibers by the immune system. Anti-3-hydroxy-3-methylglutaryl-coenzyme A reductase (anti-HMGCR) myopathy is a subtype of IMNM and was first described in 2010 (1). It has been seen both in statin-naïve and statin-exposed patients, with a prevalence of 1-2 cases per million in those who are statin-exposed (2). It presents with muscle weakness, myalgia, and elevated serum creatine phosphokinase with a mean age of 55 years. Studies have found that statin-naïve patients were younger than statin-exposed patients (3). There are currently no guidelines for the management of anti-HMGCR myopathy. Immunosuppressants are the cornerstone of therapy, but very few studies regarding the use of rituximab (RTX) have been published - all with varying responses (4). Described here is a case of anti-HMGCR-associated IMNM refractory to conventional immunosuppressants but responsive to RTX.

2. Case Report

A 61-year-old female with a history of primary hypercholesterolemia, hypothyroidism, and hypertension presented with rapidly progressing proximal upper and lower muscle extremity weakness for seven days. Her symptoms were associated with muscle pain and slowly progressive dysphagia to both solids and liquids. Her medication history included taking pravastatin for two

years. A physical examination revealed a grade of 3/5 on the Medical Research Council (MRC) Scale for Muscle Strength in the proximal upper and lower extremities bilaterally. Laboratory tests including a complete blood count, renal function test, and inflammatory markers (erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP)) were normal. Her creatinine kinase level was 15,000 U/L (normal, 26-192 U/L), her myoglobin level was higher than 1,000 (normal, 9-83ng/mL), and aspartate aminotransferase (309 U/L; normal: 10-40 U/L) and alanine aminotransferase (691 U/L; normal: 12-78 U/L) were elevated (Table 1). Differentials were polymyositis, statin-induced myopathy, paraneoplastic myopathy, and anti-signal recognition particle-associated myopathy.

Liver ultrasound was normal. Statin was discontinued and oral prednisone at a dose of 60 mg was started since IMNM was suspected. An initial rheumatologic work-up for autoimmune myopathies was negative including rheumatoid factor, antinuclear antibody, and anti-myositis antibodies including anti Jo1, anti Ro, anti-signal recognition particle, anti-mi-2, acetylcholine receptor antibody, and muscle-specific tyrosine kinase antibody. Pan computed tomography including the chest, abdomen, and pelvis did not reveal evidence of a malignancy. Magnetic resonance imaging of the right lower extremity revealed diffuse patchy muscular atrophy throughout the thigh with extensive patchy muscle edema involving the anterior medial and posterior compartments. The right quadriceps was biopsied, an electromyogram and anti-HMGCR antibodies were ordered, and pending biopsy results the patient was discharged on 60 mg of steroids.