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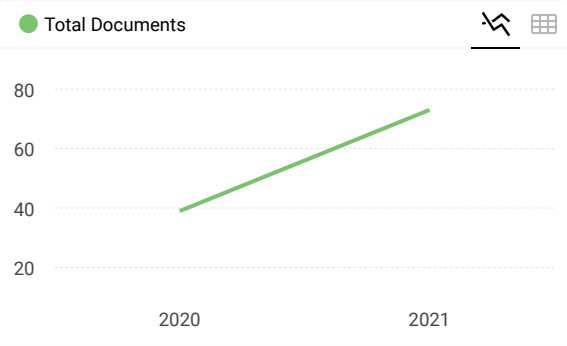

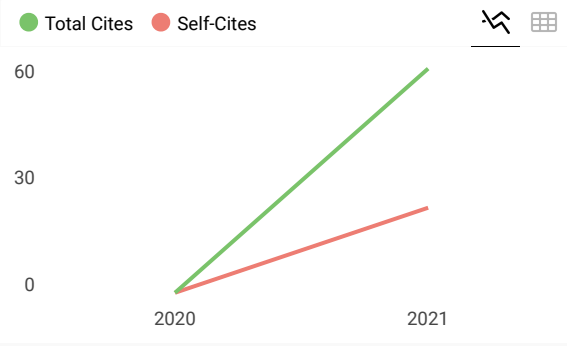

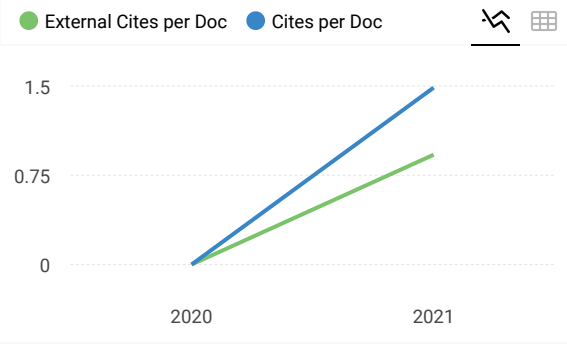

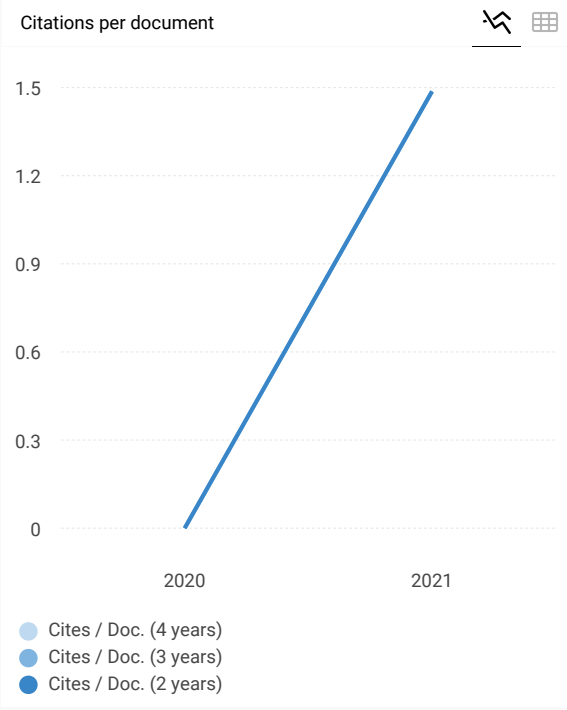

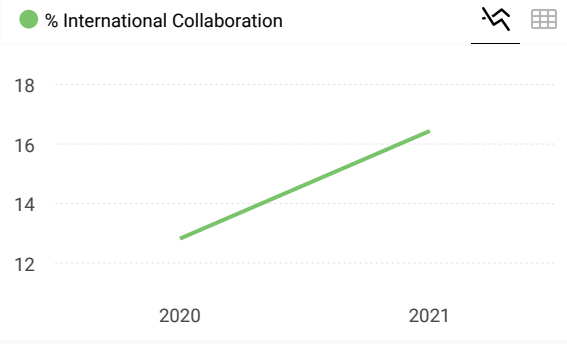

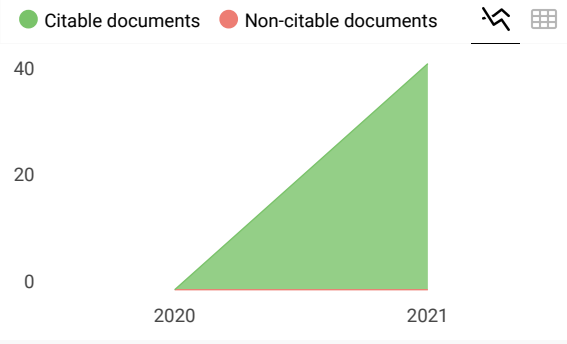

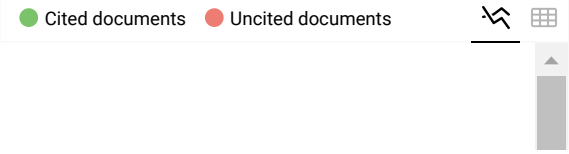

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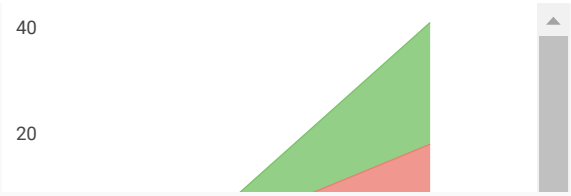

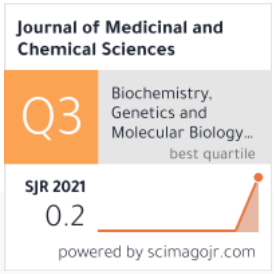

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Yours

Al-Hakeim HK

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Melanie Ortiz 4 weeks ago

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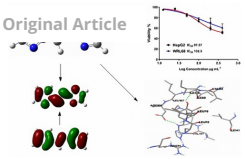
Volume & Issue: Volume 6, Issue 8, August 2023, Pages 1714-1930

Number of Articles: 20

Original Article



Synthesis, Characterisation, and Biological and Computational Studies of Novel Schiff Bases from Heterocyclic Molecules

Seta Azad Azad Aghaward; Layla Jasim Abbas; Kawkab Ali Hussein

Volume 6, Issue 8 , August 2023, Pages 1714-1726

https://doi.org/10.26655/JMCHEMSCI.2023.8.1

Abstract Four new Triazole Schiff Bases were synthesized through the green condensation and were structurally confirmed by mass spectroscopy, IR, 1H NMR, TGA, and DSC. The chief advantages of ... Read More

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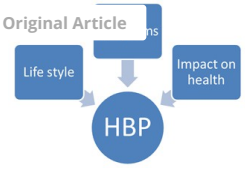

Impact of High Blood Pressure (HBP) on Health among Indian Stockholders

Tuhin Subhra Roy; B.Chandra Mohan Patnaik; Ipseeta Satpathy

Volume 6, Issue 8 , August 2023, Pages 1727-1736

https://doi.org/10.26655/JMCHEMSCI.2023.8.2

Abstract HBP is the leading preventable cause of illness and premature death worldwide. It is easily diagnosed and can be controlled with relatively simple interventions. Yet, it is often unrecognized. ... Read More

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Expression of MicroRNA-155-5p in Chronic Kidney Disease as a Potential Marker of Cardiovascular Complications

Hend Sayed Mohamed; Alshaymaa M. Alhabibi; Ashraf Abd Elmaged Donia; Ghadir Mohamed Elsawy; Nehad Refaat Ibrahim; Mona A. Mohamed

Volume 6, Issue 8 , August 2023, Pages 1737-1745

https://doi.org/10.26655/JMCHEMSCI.2023.8.3

Abstract Background: Chronic kidney disease (CKD) is a silent, serious condition requiring reliable non-invasive markers for diagnosing and predicting complications especially cardiovascular ... Read More

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Isolation and Characterization of Hyperoside-Flavanoidal Glycoside from Rourea Minor for its Anti-Hyperglycemic Activity Potential: An In Vitro Study

Kavya Yedelli; Ramachandran Kumar Pathangi

Volume 6, Issue 8 , August 2023, Pages 1746-1762

https://doi.org/10.26655/JMCHEMSCI.2023.8.4

Abstract To investigate the anti-hyperglycemic activity potential of a hyperoside flavanoidal glycoside isolated from Rourea minor in vitro. The study design entails the preparation of Rourea ... Read More

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Oral Findings, Salivary Bicarbonate, and Phosphate Levels in Patients with Gastroesophageal Reflux Disease

Yousif Shaban Rajab; Taghreed Fadhil Zaidan

Volume 6, Issue 8 , August 2023, Pages 1763-1772

https://doi.org/10.26655/JMCHEMSCI.2023.8.5

Abstract The neutralization of stomach's acidic contents and protection of esophageal mucous membrane during reflux episodes is the primary function of the major buffering components of saliva, ... Read More

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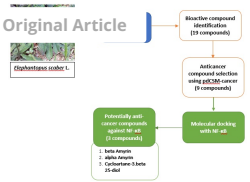

Potential of Bioactive Compound from Elephantopus scaber Linn. LEAF as Anti-Cancer Through in Silico Test

Yuliani Yuliani; Firas Khaleyla; Dwi Anggorowati Rahayu

Volume 6, Issue 8 , August 2023, Pages 1773-1782

https://doi.org/10.26655/JMCHEMSCI.2023.8.6

Abstract Elephantopus scaber contains secondary metabolites, such as triterpenoids, sesquiterpene lactones, elephantopin, epifriedelinol, lupeol, stiqmasterol, lupeolacetate, deoxyelephantopin, ... Read More

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Original Article

Ovarian Cancer (OC) Risk among Millennials in India

Ankita Nayak; Ipseeta Satpathy; B. Chandra Mohan Patnaik; Santosh Kumar Pani

Volume 6, Issue 8 , August 2023, Pages 1783-1798

https://doi.org/10.26655/JMCHEMSCI.2023.8.7

Abstract The present study is an initiative to understand various related factors associated with ovarian cancer among millennials in India. The spark behind the present study after visiting ... Read More

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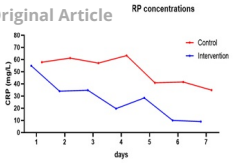

Safety and Efficacy of Popular Iranian Herbal Cold Remedy for COVID-19: A Randomized Clinical Trial in Mild to Moderate COVID-19 Cases

Samaneh Abiri; Alireza Hashemi Shiri; Mohammad Sadegh Sanie Jahromi; Esmaeil Rayatdoost; Hamid Afkhami; Ruhollah Ravanshad; Seyed Ehsan Hosseini; Navid Kalani; Parasta Heidari; Rahim Raoufi

Volume 6, Issue 8 , August 2023, Pages 1799-1809

https://doi.org/10.26655/JMCHEMSCI.2023.8.8

Abstract Background: In traditional Persian medicine, an herbal cold remedy containing Sugarcane, Black Myrobalan, and mastic is mentioned and it was being widely provided by grocery stores. ... Read More

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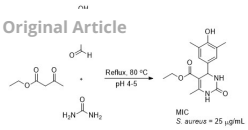

Synthesis of Dihydropyrimidinone (DHPM) Derivatives through a Multicomponent Reaction (MCR) and Their Biological Activity

Ahmad Fauzi; Azis Saifudin; Kamal Rullah

Volume 6, Issue 8 , August 2023, Pages 1810-1817

https://doi.org/10.26655/JMCHEMSCI.2023.8.9

Abstract The spread of incurable diseases, especially infectious diseases caused by antibiotic-resistant bacteria and certain cancers, has become a serious public health concern. Consequently, ... Read More

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Electrochemical Polymerization of Eugenol and Corrosion Protection Studies of Stainless Steel 304L Alloy

Ayat Monther Alqudsi; Khulood Abed Saleh

Volume 6, Issue 8 , August 2023, Pages 1818-1829

https://doi.org/10.26655/JMCHEMSCI.2023.8.10

Abstract This research includes the preparation of a poly-eugenol layer on the surface of a stainless steel electrode by electropolymerization process, where the polymer was diagnosed using ... Read More

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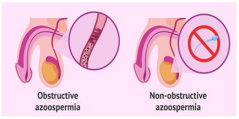

Relationship of Azoospermia Factor (AZF) and Inhibin B Level in Patients with Non-Obstructive Azoospermia

Ahmed Gamal El-Metwaly Ghanem; Mohamed Ali Atwa Barakat; Reham Mohammed El-Farahaty; Youssef Elbayoumi Youssef Soliman; Sohier Yahia; Hosam Abdel Twab

Volume 6, Issue 8 , August 2023, Pages 1830-1842

https://doi.org/10.26655/JMCHEMSCI.2023.8.11

Abstract Background: Non-obstructive azoospermia (NOA) is a challenging subset in management of infertile males. Micro-deletion of the azoospermia factor (AZF) region located on long arm of ... Read More

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Mini-Review Article

Mechanism of Immune System for Evading and Escaping Cancer Cells: A Brief Review

Ali Mohammed Abd AL-Ameer; Lubna Abdulazeem; Mazin H. Kzar; Essam Shawky Khattab; Ahmed Samir Naje

Volume 6, Issue 8 , August 2023, Pages 1843-1850

https://doi.org/10.26655/JMCHEMSCI.2023.8.12

Abstract For everyone, at all ages, to live healthy lives and to promote well-being, there should be good health and welfare at every stage of one's life, beginning at birth, whereas health ... Read More

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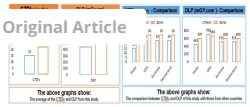

Evaluating the Average Exposure Levels Provided to Neck and Cervical Spine CT Patients

Mysara Rumman; Khaled Sabarna; Jessica Badawi; Israa Bahar; Mohammad Darawai

Volume 6, Issue 8 , August 2023, Pages 1851-1861

https://doi.org/10.26655/JMCHEMSCI.2023.8.13

Abstract To apply the radiation protection optimization concept, the current study compares the average doses utilized to produce the most popular CT scans of neck and cervical spine at the ... Read More

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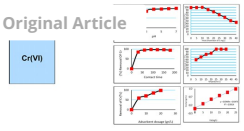

Using Modified Resins in Chromium Ion Removal from Aqueous Solutions

Lubna Salah Muhammed; Hamsa Thamer Sadeq

Volume 6, Issue 8 , August 2023, Pages 1862-1871

https://doi.org/10.26655/JMCHEMSCI.2023.8.14

Abstract Heavy metals are one of environmental concerns in industrial wastewater effluents, and adsorption is one of the widely used processes in removing heavy metals from aqueous solutions. ... Read More

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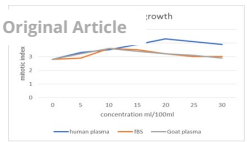

Effect of Different Plasma Concentrations Human Plasma and Goat Plasma on Human Blood Cell Growth In Vitro

Sada Jasim Abdulameer

Volume 6, Issue 8 , August 2023, Pages 1872-1877

https://doi.org/10.26655/JMCHEMSCI.2023.8.15

Abstract Cultivated media for the growth of human blood cells are many, but the use of natural and less expensive materials is the most important to obtain the suitable growth for the cultivation ... Read More

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Use of Metal Frame Removable Partial Denture in Rheumatoid Arthritis: A Case Report

Michael Josef Kridanto Kamadjaja; Nike Puji Rahmawati; Wiwik Herawati Waluyo

Volume 6, Issue 8 , August 2023, Pages 1878-1884

https://doi.org/10.26655/JMCHEMSCI.2023.8.16

Abstract Rheumatoid arthritis is an autoimmune disease that attacks the joints and causes complaints in the oral cavity, especially periodontitis. This study identified the case of a patient ... Read More

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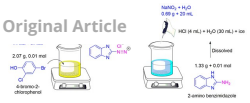

Synthesis, Spectral, Cancer Inhibitory Activity and Antimicrobial Studies of Cobalt(II) and Nickel(II) Metal Complexes Containing Azo Derived from 2-Amino Benzimidazole

Neda Hasan; Muhammed Abdel Hasan Shallal; Hayfaa A. Mubarak; Mustafa M.Karhib; Ahmed S Naje

Volume 6, Issue 8 , August 2023, Pages 1885-1896

https://doi.org/10.26655/JMCHEMSCI.2023.8.17

Abstract The production of the tridentate Azo ligand 2-[2/-(benzimidazolyl)azo]-4-bromo-6-chloro phenol (BIABrClP) complexes using Co(III) and Ni(II) is discussed in this article. Spectral methods ... Read More

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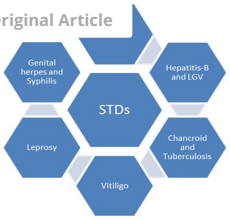

Sexually Transmitted Diseases (STDs) among Gen Y in India

Jagat Jyoti Amar Singh; Ipseeta Satpathy; B. Chandra Mohan Patnaik

Volume 6, Issue 8 , August 2023, Pages 1897-1908

https://doi.org/10.26655/JMCHEMSCI.2023.8.18

Abstract Infections transmitted by sexual contact are known as sexually transmitted diseases (STDs). A significantly higher risk of STDs is associated with young Gen Y individuals than older ... Read More

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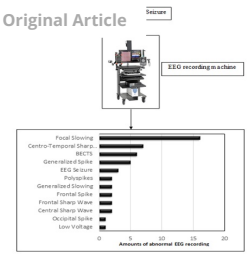

First Unprovoked Seizure in Indonesian Children

Prastiya Indra Gunawan; Riza Noviandi; Sunny Mariana Samosir

Volume 6, Issue 8 , August 2023, Pages 1909-1914

https://doi.org/10.26655/JMCHEMSCI.2023.8.19

Abstract Introduction: First unprovoked seizure (FUS) in children is a frightening health problem that often to be taken to emergency room. EEG is absolutely required to determine seizure activity ... Read More

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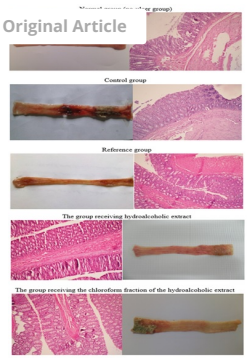

Anti-Inflammatory Effect of Curcuma Longa on Ulcerative Colitis Caused via AcOH in Rats

Parvin Mahzouni; Salar Nasr Esfahani; Mohsen Minaiyan; Gholamreza Asghari; Mozhgan Saeidi

Volume 6, Issue 8 , August 2023, Pages 1915-1924

https://doi.org/10.26655/JMCHEMSCI.2023.8.20

Abstract Inflammatory bowel disease (IBD) is a chronic relapsing and remitting inflammatory disorder of the small intestine and colon. The purpose of this research was to investigate the ... Read More

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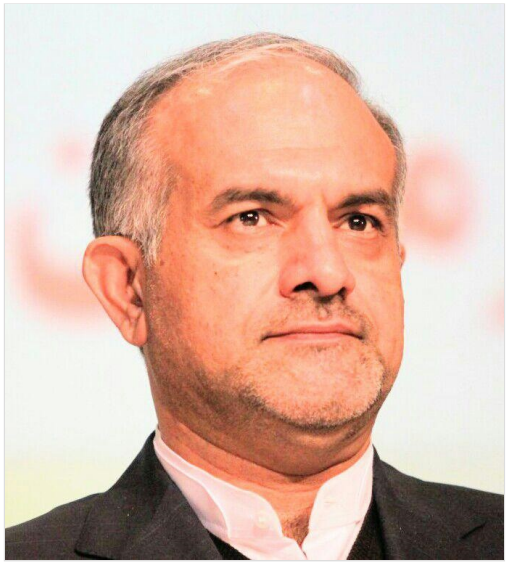

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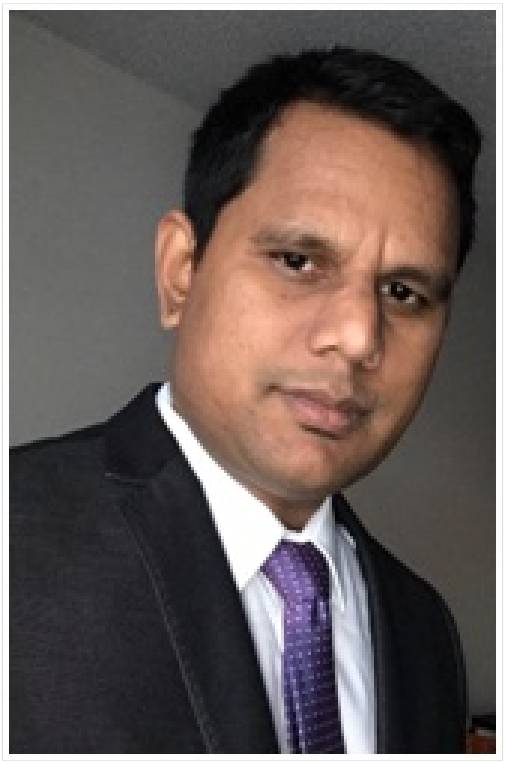

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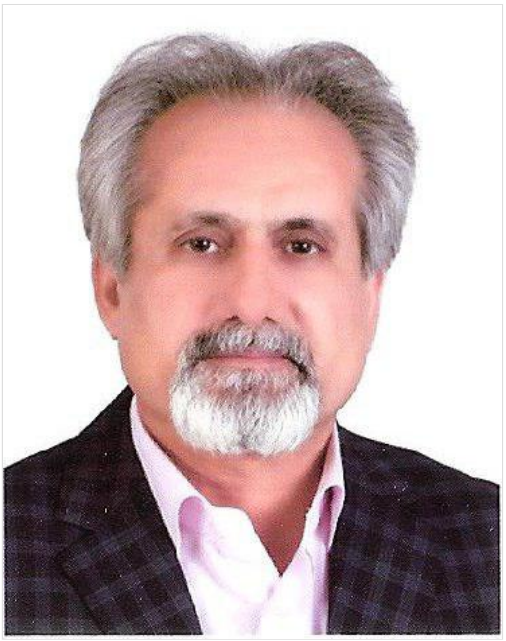

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Original Article

First Unprovoked Seizure in Indonesian Children

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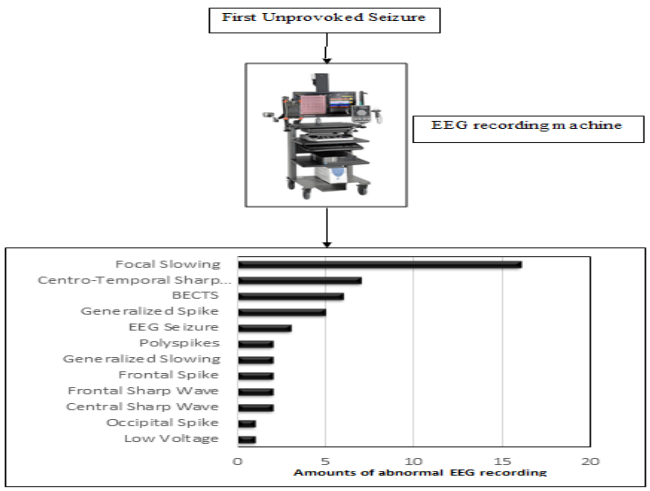
ABSTRACT

Introduction: First unprovoked seizure (FUS) in children is a frightening health problem that often to be taken to emergency room. EEG is absolutely required to determine seizure activity in the brain. It can differentiate seizures from nonepileptic paroxysmal events. This study aims to determine the EEG description of children who experience FUS.
Methods: This study used a retrospective observational method using medical records. All patients in the category of children aged 0 months to 18 years old who came with their FUS and had recorded an EEG, were included. EEG recording is done as soon as possible and a maximum of 2 days after the seizure occurs. Data were analyzed using descriptive statistics and presented in tables and graphs.
Result: The clinical characteristics of FUS show that the majority of boys (61.3%) are older than 5 years old (52.8%). The types of seizures that appear are more generalized seizures and mostly the duration is less than 5 minutes. A few patients have anemia. Abnormal EEG interpretation results reached 53.8% with around 68% of them showing epileptiform discharge. Classification of abnormal EEG indicates more on focal slowing, centrotemporal sharp wave, and BECTS activity.
Conclusion: FUS in Indonesia mostly reported in boys. Generalized seizures were commonly seen. EEG interpretation is mostly abnormal that commonly showing epileptiform discharge. Most of the EEG abnormal classifications that lead to epileptiform activity are focal slowing. This can be a considerable of the possibility of recurrent seizure in later life.

GRAPHICAL ABSTRACT



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Introduction

Seizures are a neurological clinical complaint that is often found in children so the child has to be taken to the emergency room. The first seizure is a frightening event and creates worry for the patient and family [1]. This is further an emergency event that brings depression to medical personnel. The first unprovoked seizure (FUS) is the first seizure event in the history of life without fever, an infectious process that attacks the brain, the impact of certain drugs, metabolic processes, head trauma, or hypoxia [2]. The incidence of single FUS in the pediatric population ranges from 30-50 per 100,000 persons and some estimate 23-61 per 100,000 person-years [3, 4]. Epidemiological data in Indonesia showed that 17 cases of FUS were found in children in Surabaya in the 2-year research duration [5]. The FUS diagnosis usually needs the confirmation of seizure nature of the event, precisely etiology, seizure type classification, and epileptic syndrome. Seizure recognition is important prognostic information. History of disease and physical examination are not sufficient to prove the seizure activity and further work up with Electroencephalogram (EEG) is valuable because episode that mimic seizures are also common [2, 4].

EEG is a device that can detect seizures. It is a test that measures electrical activity in the brain using electrodes attached to the scalp. Neuron may communicate via electrical impulses that are active even during sleeping. In the case of children with epilepsy, an EEG is absolutely required to determine seizure activity in the brain [6, 7]. EEG can also differentiate seizures from nonepileptic paroxysmal events. Conventional EEG in children is commonly done in about half an hour, given that not all countries have 24-hour EEG monitoring. In emergency cases, there is really no reason to do an EEG, but it can be done as soon as possible after the seizure occurs. EEG in FUS can be used to predict the occurrence of subsequent seizures as well as to localize the source of seizures, thereby facilitating the seizure type and potential epileptic syndrome as well as confirm the diagnosis and treatment [8, 9]. Several studies stated that EEG that performed after FUS demonstrate high abnormalities of approximately 40-60% [2].

This study aims to determine the EEG description of children who experience FUS. They perform EEG recording as soon as possible following FUS to evaluate the seizure activity in the brain.

Materials and Methods

Patients

This study used a retrospective observational method using medical records from January 2018 to January 2020. All patients in the category of children aged 0 months to 18 years old who came with their first unprovoked seizure, and then had an EEG recorded were included in the inclusion criteria. Patients were excluded if the data in the medical record were incomplete or other conditions were found as a trigger of the seizures, such as fever, intracranial infection, metabolic abnormalities, space-occupying lesions, or metabolic abnormalities. The EEG recording was performed using a Cadwell 32-channel EEG system ARC ESSENTIA machine and interpreted by a pediatric epileptologist who has an international certificate as EEG reader by ILAE. EEG recording is done as soon as possible and a maximum of 2 days after the seizure occurs. EEG recording was done using conventional techniques for 30 minutes with sleep and wakefulness phases. Data taken from medical records included age, sex, type of seizure that occurred, duration of seizure, clinical condition and laboratory results of the patient's blood examination, and EEG interpretation results.

Ethics

This research has been registered and approved to do under the number KEPK-1860/2020-III issued by the Ethics Committee of Dr. Soetomo General Academic Hospital, Indonesia.

Statistics

Research data is processed using IBM SPSS v23. Data were analyzed using descriptive statistics and presented in tables and graphs.

Results and Discussion

The clinical characteristics of FUS show that the majority of boys (61.3%) are older than 5 years old (52.8%). The types of seizures that appear are more generalized seizures and mostly the duration is less than 5 minutes. A few patients have anemia. Abnormal EEG interpretation results reached 53.8% with around 68% of them showing epileptiform discharge (Table 1). Classification of abnormal EEG indicates more on focal slowing, centrotemporal sharp wave, and BECTS activity (Figure 1).

Table 1. Baseline characteristics of the subjects

Baseline Characteristics	Total (n = 106)
Age	
< 5 years old	50 (47,2%)
≥ 5 years old	56 (52,8%)
Sex	
Boys, n (%)	65 (61,3 %)
Girls, n (%)	41 (38,7%)
Seizures Type	
Generalised seizure	89 (83,9%)
Focal seizure	17 (16,1%)
Seizure duration	
< 5 minute	67 (63,2%)
≥ 5 minute	39 (36,8%)
Neurocutaneus syndrome	
Strudge weber syndrome	1
Tuberosklerosis	1
Laboratory findings	
Anemia	7
Leucosytosis	4
EEG interpretation	
Abnormal	57 (53,8%)
Normal	49 (46,2%)
Type of abnormal wave • Epileptiform discharge • Non-epileptiform discharge	38 (66,7%) 19 (33,3%)

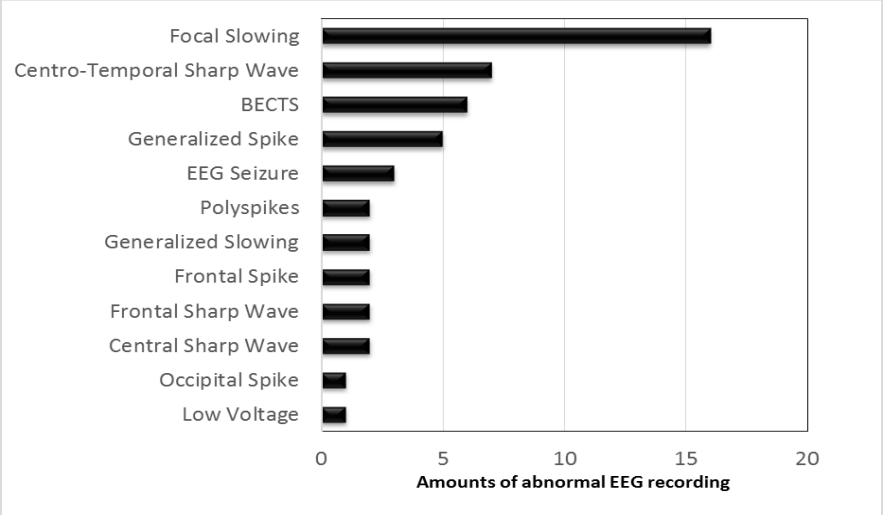

Figure 1: Classification of Abnormal EEG

The first seizure without provocation still holds a lot of mystery. The first seizure without provocation in this study can manifest as brief seizures, recurrent seizures, or long seizures of more than 30 minutes which is referred to as status epilepticus. Recurrent seizures which are still within 1 day are categorized as single seizures. Approximately, 10-12% of patients with FUS experience status epilepticus and the likelihood of status epilepticus is higher in FUS with recurrent seizures [10].

The FUS diagnosis is also enforced by ruling out other conditions that look alike seizures such as syncope, breath-holding spells, tics, migraines, infantile masturbation, and sleep disruption (parasomnias). Therefore, the ability to accurately describe seizures is required so that it can be distinguished whether these are seizures or other events that resembling a seizure. If seizure-like events have been ruled out, other causes of seizures should be traced before diagnosing FUS. In research, the FUS definition has been adapted to ILAE [2, 6].

Electroencephalography is advantageous to identify the type of seizures, help classify seizures, and predict long-term prognosis. EEG examination can be helpful in recognizing encephalopathy, subclinical seizures, and metabolic abnormalities. Performing an EEG examination can reveal focal epilepsy or lateralization abnormalities. If possible, an EEG should be obtained, while the patient is awake and asleep [11]. According to the ILAE, pediatric patients who have their first seizure whose EEG results show epileptiform activity and have remote symptomatic etiology, or structural brain abnormalities can be diagnosed with epilepsy [7].

This study showed 53.8% abnormal EEG results with 66.7% showing epileptiform activity. The study by Dusitanond yielded almost the same results, that is 57.4% abnormal EEG with a lower epileptiform activity around 28.6% [12]. A study from Portugal with a larger number of samples found 38% abnormal EEG data with 31% epileptiform activity in single FUS while in multiple FUS, the abnormality rate was higher [13]. According to Sansevere, the number of EEG abnormalities in FUS summarized from various studies ranges from 40-60% [2].

Most EEG abnormal classifications that lead to epileptiform activity are focal slowing. Moreover, benign epileptiform centrotemporal spikes (BECTS) and generalized spikes were further found similar to this study where Pereira found that the type of epilepsy which frequently found was localization-related epilepsy with BECTS as the most common epilepsy syndrome. Besides, generalized epilepsy and other several specific epilepsy syndromes are also discovered [13]. In the population in Lebanon who undergo FUS, the abnormal location of EEG dominated by 88.9% of sharp waves was found more in the temporal area [14]. The same thing was found in a study in Vanadia which stated that 55.6% of the EEG abnormal locations were temporal areas [5].

Most children do not experience recurrent seizures after FUS. The risk of seizure recurrence is an important factor to be considered in dealing with children with FUS. Lawn stated that the duration of seizure-free period after FUS is associated with the recurrence risk. Most patients undergo a subsequent seizure episode after 3 months after the first event [15]. Several risk factors for the seizures recurrence in FUS include neurological abnormalities, epileptiform EEG appearance, and previous history of complex febrile seizures [10, 13].

Determining the recurrence risk after FUS is not easy. Sometimes detailed information to determine risk factors is not clear. A neurocutaneous syndrome is one of the clearest predictors of clinical manifestations. In this study, there were 2 neurocutaneous syndromes; namely, Strudge-Weber syndrome and Tuberous sclerosis. Strudge-Weber syndrome manifests as capillary-venous malformation with facial port-wine stain in trigeminal V1-V3 distribution, congenital glaucoma, and seizures that develop into intractable and progressive mental retardation [16]. In tuberculosis, 90% of patients manifest one or more cutaneous lesions such as hypomelanic macules, facial angiofibromas, or fibrotic plaques. In central nervous system manifestation, seizures and epilepsy are the most common manifestations besides mental

retardation and behavioral problems [17]. In this study, these two syndromes still manifest as FUS with neurocutaneous manifestations.

The weakness of this study is that the EEG device used is not a long-term EEG monitoring model that has high sensitivity because this device is not available in Indonesia. While the strength of this study is that we do an EEG as soon as possible after the seizure occurs. This makes it possible to detect pathological abnormalities that cause seizures in more detail.

Conclusion

FUS in Indonesia mostly reported in boys than girls. Generalized seizures were commonly seen type of seizures. EEG interpretation is mostly abnormal that commonly showing epileptiform discharge. Most EEG abnormal classifications that lead to epileptiform activity are focal slowing. This can be a considerable of the possibility of recurrent seizure in later life.

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Author's contribution

All author contributed to conceptualization, data collection, drafting, analysis, manuscript writing, and final review of the manuscript.

Conflict of interest

The author declared no conflict of interest.

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