

REKAM JEJAK DIGITAL

**THE ROLE OF METHYLPREDNISOLONE IN CHILDREN WITH IMMUNE
THROMBOCYTOPENIC PURPURA: A CASE REPORT**

JOURNAL OF SOUTHWEST JIAOTONG UNIVERSITY

STATUS JURNAL SAAT INI

Xinan Jiaotong Daxue Xuebao/Journal of Southwest Jiaotong University- Impact Score, Overall Ranking, h-index, SJR, Rating, Publisher, ISSN, and Other Important Metrics

Last Updated on November 16, 2021

Impact Score  0.64	h-Index  21	Rank  14568	SJR  0.308
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2021/2022	Coming Soon
2020	0.64
2019	0.63
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Multidisciplinary | Multidisciplinary | China | Journals | 2020

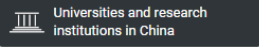
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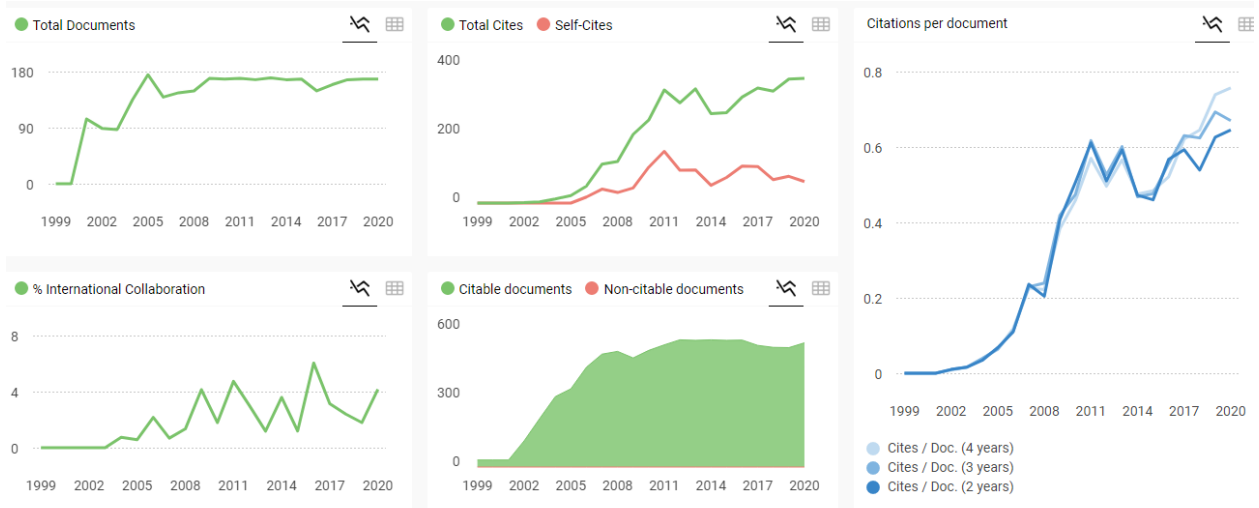
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Title	Type	↓ SJR	H index	Total Docs. (2020)	Total Docs. (3years)	Total Refs. (2020)	Total Cites (3years)	Citable Docs. (3years)	Cites / Doc. (2years)	Ref. / Doc. (2020)
1 Tsinghua Science and Technology	journal	0.428 Q1	43	69	200	2169	564	199	2.79	31.43 
2 Xinan Jiaotong Daxue Xuebao/Journal of Southwest Jiaotong University	journal	0.308 Q2	21	168	494	3315	331	494	0.64	19.73 

SCIMAGO RANK JOURNAL

Xinan Jiaotong Daxue Xuebao/Journal of Southwest Jiaotong University

COUNTRY China 	SUBJECT AREA AND CATEGORY Multidisciplinary ↳ Multidisciplinary	PUBLISHER Science Press	H-INDEX <h1>21</h1>
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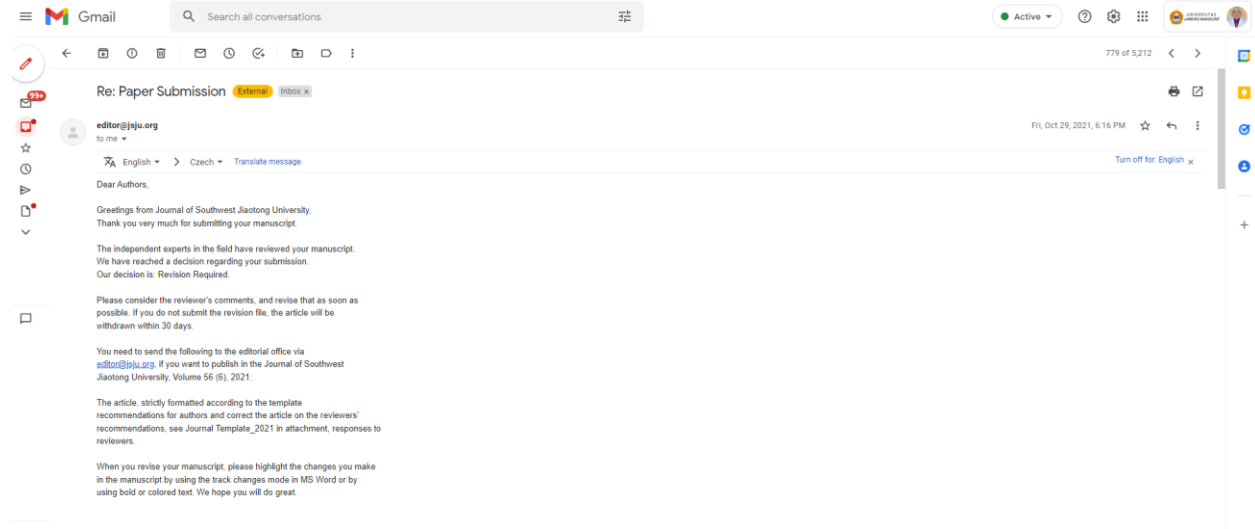
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Greetings from Journal of Southwest Jiaotong University,
Thank you very much for submitting your manuscript.

The independent experts in the field have reviewed your manuscript.
We have reached a decision regarding your submission.
Our decision is: Revision Required.

Please consider the reviewer's comments, and revise that as soon as possible. If you do not submit the revision file, the article will be withdrawn within 30 days.

You need to send the following to the editorial office via editor@jsju.org, if you want to publish in the Journal of Southwest Jiaotong University, Volume 56 (6), 2021:

The article, strictly formatted according to the template recommendations for authors and correct the article on the reviewers' recommendations, see [Journal Template_2021](#) in attachment, responses to reviewers.

When you revise your manuscript, please highlight the changes you make in the manuscript by using the track changes mode in MS Word or by using bold or colored text. We hope you will do great.



Reviewers' Comments:

Reviewer № 1:

The topic is interesting and important considering the current times we are in. However, there are several key areas that need more work prior to the publication.

We have summarized the required changes.

- 1- There are linguistic mistakes that should be fixed.
- 2- The abstract (250 words) should contain Objectives, Methods/Analysis, Findings, and Novelty /Improvement. It is suggested to present the abstract in one 250 words paragraph. Abstract template: The article describes a new method/idea (etc.) ..., based on ..., enabling to Using (describe the methods), the authors (describe the obtained results)..... As an example, we illustrate the proposed method/technique... Our method/proposal allows for improvement (any quantitative indicators by XX, X%)... The new method effectiveness evaluation is confirmed by the calculation New research results develop/supplement/improve ... and can be used for....
- 3- Please compare the results of the present study with previous studies and analyze the results completely.
- 4- A flowchart should be added to show the research methodology to visually present the study better.
- 5 - Add 3-4 research hypotheses.

Reviewer #2:

- The Conclusion section needs to be described scientifically. Kindly frame it along the following lines:

- i. Main findings of the present study (200 words)
- ii. Comparison with other studies (200 words)
- iii. Implication and explanation of findings (150 words)
- iv. Strengths and limitations (150 words)
- v. Conclusion, recommendation, and future direction (200 words).

Please submit your revision manuscript directly to editor@jsju.org.

Deadline for corrections: November 10, 2021.



RESPONSE TO THE REVIEWER: 31 OKTOBER 2021

To the Reviewer...

Thanks for correcting and suggesting the manuscript. The author had amended and added sentences to emphasize the case. The author makes every effort possible to answer the reviewer's questions. I colored the corrected or added words in red. The author hopes this manuscript could be accepted. If there is still a correction or suggestions, do not hesitate to inform.

Reply to Reviewer no.1

1. There are linguistic mistakes that should be fixed

Answer :

I have tried to correct linguistic mistakes. Changes can be seen in the abstract, introduction, case presentation, and discussion.

2. The abstract (250 words) should contain Objectives, Methods/Analysis, Findings, and Novelty /Improvement. It is suggested to present the abstract in one 250 words paragraph.

Answer :

I have created a structured abstract of fewer than 250 words. My article is a case report. So the method is to compare the treatment given in this case with other treatments in the literature. In this case, what was unique was that she was <1 year old with a platelet of <1000/uL, acute bleeding marked by petechiae, and Hb 8.1 g/dl. So because the case was an emergency, besides methylprednisone, platelet suspension and PRC transfusions were also given. The novelty is platelet suspension and PRC transfusions are given when thrombocytopenia is accompanied by bleeding that is not easy to resolve.

3. Please compare the results of the present study with previous studies and analyze the results completely.

Answer :

I have added three other studies that support and do not support this research, namely references no. 9,10,11.

4. A flowchart should be added to show the research methodology to visually present the study better.

Answer :

My article is a case report, so I think no need to make a flowchart.

5. Add 3-4 research hypotheses.

Answer :

My article is a case report, so I think no need to make research hypotheses.

Reply to Reviewer no.2

1. The Conclusion section needs to be described scientifically. Kindly frame it along the following lines:
 - i. Main findings of the present study (200 words)
 - ii. Comparison with other studies (200 words)
 - iii. Implication and explanation of findings (150 words)
 - iv. Strengths and limitations (150 words)
 - v. Conclusion, recommendation, and future direction (200 words).

Abstract:

Answer :

- i. Main findings of the present study is methylprednisolone in the acute phase can increase the platelet count.
- ii. Comparison with other studies : I have added the sentence : **“if there is a financial hindrance, it is wise to give a low-cost drug, i.e., methylprednisolone.”**
- iii. Implication and explanation of findings : Platelet suspension transfusion is only done if thrombocytopenia is accompanied by bleeding that is difficult to resolve.
- iv. The limitation of this study is only a case report, only one case.
- v. The recomemendation is : Platelet suspension transfusion is only done if thrombocytopenia is accompanied by bleeding that is difficult to resolve

With regards,

HARAPAN PARLINDUNGAN RINGORINGO

Category

Environmental science

**THE ROLE OF METHYLPREDNISOLONE IN CHILDREN WITH IMMUNE
THROMBOCYTOPENIC PURPURA: A CASE REPORT**

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Abstract

Introduction: ITP is a bleeding disease often found by doctors, with an incidence of about 1 in 10,000 children, rarely found in infants < 1-year-old. Bleeding often occurs when the platelet is <20,000/uL. **Objective:** The objective of this study is study aims to show that methylprednisolone is effective in severe thrombocytopenia. **Case report:** A girl of 2 months and nine days, weighing 5.6 kg, came to the hospital with complaints of petechiae on the forehead, cheeks, extremities. The patient is not feverish, pale, weak, cannot drink. No history of trauma. Purpura on the elbows and knees. Laboratory: Hb 8.1 g/dL, leukocytes 12,290/uL, platelets 1000/uL, hematocrit 22.2%, Diff Count: basophils 0%, eosinophils 3%, stems 1%, segments 17%, lymphocytes 70%, monocytes 9%. Peripheral blood features hypochromic, microcytic, lymphocytosis, platelets not found. The diagnosis is Newly diagnosed ITP with anemia due to bleeding. The patient was treated at HCU, given 2U platelet transfusion, 75 mL PRC transfusion, 1-2 mg/kg body weight of methylprednisolone every 12 hours for seven days. The patient went home in stable. **Conclusion:** Methylprednisolone in the acute phase can increase the platelet count. Platelet suspension transfusion is only done if thrombocytopenia is accompanied by bleeding that is difficult to resolve.

Keywords: ITP, child, methylprednisolone.

Treatment of ITP must, of course, be based on the complex pathogenesis of ITP. The first-line drugs are glucocorticoids, IVIG, anti-D immunoglobulin. This patient receives a standard dose of 2 mg/kg body weight of methylprednisolone every 12 hours (4 mg/kg body weight/day). **because-it** It is combined with a platelet suspension transfusion, which is expected to resolve the emergency immediately. Even though the patient had received the platelet suspension and methylprednisolone for two days, the platelet count only increased to 5000/uL. On the 7th day of treatment, the platelets had become 33,000/uL. Petechiae seemed to **have decreased so much disappear** that the patient was discharged. The main goal of ITP treatment is not merely to increase the platelet count to an expected value but is to an effective platelet count to stop bleeding. Generally, if the platelet count is above 30,000/uL, the clinical experience will be better. The choice of glucocorticoids in these patients is because IVIG is expensive and difficult to obtain. After six months, monitoring the platelet count was still normal even though the corticosteroid drugs had been discontinued for five months. Patients received DPaT immunization at the age of 8 ½ months and 12 months, and no visible lesions were seen at the injection site. **Acero-Garcés et al. reported that for rising platelet count, platelet count with IVIG 2g/kg was lower than methylprednisolone 50mg/kg after a month [9]. Furthermore, Şoğüt et al. reported that the ITP patients receiving IVIG had been found to progress to chronicity more than those receiving methylprednisolone [10]. Contrarily, Safapour reported a study comparing therapy methods employing corticosteroids and IVIG in affected children and found no significant difference**

between long-term treatment outcomes for ITP [11].

Suppose first-line treatment fails (clinical manifestations and thrombocytopenia cannot be controlled within 3-6 months of therapy); in that case, it is necessary to think about treatment with second-line drugs. The second-line drugs, namely splenectomy, rituximab, thrombopoietin receptor agonists (TPO-RA), eltrombopag, romiplostim, and avatrombopag). If second-line drugs are ineffective, then third-line drugs can be used, such as Fostamatinib (the Syk inhibitor), oseltamivir (inhibits the desialization process, thereby reducing platelet clearance the liver). Atorvastatin affects bone marrow endothelial cells to support hematopoiesis, including megakaryopoiesis[12-14]. Low doses of decitabin (DAC) can increase the expression of tumor necrosis factor-related apoptosis-inducing ligand (TRAIL) by reducing the methylation process in megakaryocytes, thus increasing megakaryocyte maturation and platelet production [15].

At the start of the disease, we cannot differentiate between acute and chronic ITP. ITP in infants, 9% will be chronic ITP; ITP in children aged 25-119 months, 18% will be chronic ITP, and ITP in children ≥ 120 months, 47% will become chronic ITP[16]. Jung et al. stated that 85.9% of children with ITP would be in remission, and 14.1% of cases will be Chronic ITP; the prognostic factors for chronic ITP are older children and the slow appearance of clinical symptoms[17]. Makis et al. stated that the prognostic factors for developing chronic ITP are age > 10 years, no previous infection history, more protracted clinical manifestations, and initial platelet count >10,000/uL[18]. Other investigators reported that the prognostic factors that provided complete

(3-12 months), and 3) 25% become chronic (> 12 months)[1].

II. CASE PRESENTATION

A girl of 2 months and nine days, weighing 5.6 kg, came to the hospital with complaints of red spots on the forehead, cheeks, and all extremities. The patient had no history of vaccination days or weeks prior. However, two weeks earlier, the patient had a common cold. In the family, no one has this kind of disease. The patient is conscious, not feverish fevered, weak, pale, cannot drink, is not-active inactive, and has no history of trauma. On physical examination, the patient appears conscious, and vital signs are within normal limits. Eye, ENT, mouth, and abdomen, no abnormalities. Heart Lungs within normal limits. Petechiae on the forehead, cheeks, and all extremities, purpura on the elbows and knees. On laboratory examination, Hb 8.1 g/dL, leukocytes 12,290/uL, platelets 1000/uL, hematocrit 22.2%, Diff Count: basophils 0%, eosinophils 3%, stems 1%, segments 17%, lymphocytes 70%, monocytes 9%. RBC 2.8 million/uL, MCV 82.9fL, MCH 28.9pg, MCHC 34.9%, RDW_CV 16.7%. Peripheral smear features hypochromic, microcytic, lymphocytosis, blast, and platelets not found. The diagnosis is Newly diagnosed ITP with anemia due to bleeding. The patient was treated at HCU, given 2U platelet transfusion, 75 mL PRC transfusion, 1-2 mg/kg body weight of methylprednisolone every 12 hours for seven days. After seven days of treatment, the patient went home in good condition.

III. DISCUSSION

Immune thrombocytopenia most commonly occurs in children 2-7 years of age [2]. The incidence of pediatric ITP is 4.3 per 100,000 people/year, and in the 2-5 year age group, the incidence is higher in boys than girls[3]. This disease is rarely found in infants <1 year old, probably because of the immature baby's immune system. In general, there is always a history of

257 pediatric ITP patients[3], while Hashemi et al. reported a history of the common cold disease in 47% of cases and 25.8% had a history of immunization[4].

Bleeding often occurs when the platelet count is <20,000/uL. Purpuric, mucosal, and intracranial hemorrhages were found in 83.3% of cases, 40.95 cases, and 3%, respectively[4] Eighty percent of children with ITP who suffer from acute bleeding will recover within days or weeks with or without treatment, and recover within six months (acute). The platelet count will return to normal (>150,000/uL) in 50% of cases within 1-3 months and 60-75% within six months of the onset of thrombocytopenia[5,6].

In this case, the patient presented with petechial bleeding on the scalp and all extremities. Two weeks earlier, the patient had a common cold. The patient is conscious, looks weak, pale, inactive, and does not want to drink. Complete blood count showed a Hb 8.1 g/dL with a platelet count of 1000/uL, and no blast cells and platelets were found on the peripheral blood smear. This situation is an emergency considering that only 1000 platelets/uL are at high risk of intracranial bleeding. Bleeding intracranial is rare, only 0.5-1% of cases when the platelet count is <10,000/uL[7], but this should be considered. Therefore this patient was given a 2U platelet suspension transfusion, 75 ml packed red cell (PRC) transfusion, and 2 mg/kg body weight of methylprednisolone every 12 hours for seven days. As a result, the patient's condition is improving. On the 3rd day of treatment, the platelet count rose to 5,000/uL. On the 5th day, it became 12,000/uL; on the 7th day, the platelet count was 33,000/uL, and the patient went home in stable. Next, the patient received prednisone therapy for one week at a dose of 2 mg/kg body weight/day followed by tapering off for up to 1 month from the diagnosis of ITP when the platelet count became 259,000/uL. Furthermore, the increase in platelet count the increment of platelet count from the start of treatment to 6 months of monitoring can be seen in Figure-1. Within one month of treatment, the

remission when ITP was established were a low MPV level $<8\text{fL}$ and previous infection history[19]. In this case, the patient was two months nine days old when the initial diagnosis of ITP, female, had a history of illness two weeks before, and bleeding appears suddenly. In addition, the initial platelet count $<10,000/\text{uL}$, complete remission within one month, and platelets remain normal within six months of monitoring, so the prognosis of this patient is good, there will be no chronic ITP.

IV. CONCLUSION

Methylprednisolone in the acute phase can increase the platelet count. **If there is a financial hindrance, it is wise to give a low-cost drug, i.e., methylprednisolone.** Platelet suspension transfusion is only done if thrombocytopenia is accompanied by bleeding that is difficult to resolve.

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- [11] Safapour A, Alghasi A, Abolnezhadian F. Recurrence rate in patients with acute immune Thrombocytopenic purpura in Ahvaz southwest

ACCEPTED FOR PUBLICATION : 5 NOPEMBER 2021

The screenshot shows a Gmail interface. At the top, there is a search bar with the text "Search all conversations". Below the search bar is a navigation bar with icons for back, forward, trash, mail, clock, reply, share, and more options. The main content area shows an email from "editor@jsju.org" to "HARAPAN PARLINDUNGAN RINGORINGO". The email text reads: "Dear Editor. I have sent proof of payment of the article processing charge of 520 EURO. Has it been received? Please confirm. Thank you". Below this, there is a response from "editor@jsju.org" to "me". The response text reads: "Dear Authors, Thank you very much for the email. We would like to confirm that we have received the payment successfully. Please await publication in Vol. 56 (6) 2021. Yours sincerely, 霍婉明". At the bottom of the response, there is contact information for the Journal of Southwest Jiaotong University, including a URL and an email address.

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Research article

Social Sciences

THE ROLE OF METHYLPREDNISOLONE IN CHILDREN WITH IMMUNE THROMBOCYTOPENIC PURPURA: A CASE REPORT

甲基潑尼松龍在免疫性血小板減少性紫癍兒童中的作用：病例報告

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