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D18_799_Martono_T_Utomo / Submission confirmation

1 message

izzet yavuz <izzetyavuz@hotmail.com> Thu, Oct 25, 2018 at 10:20 PM
To: martono tri utomo <martono-t-u@fk.unair.ac.id>

Dear Prof. Dr. Martono T Utomo,

Your manuscript entitled " **Zinc supplementation in cytokine regulation during LPS-induced sepsis in rodent** " has been successfully submitted to the JIDMR by e-mail and will be considered for publication in **"Journal of International Dental and Medical Research"**.

We are sending your article for a peer-review and when we receive an evaluation we will inform you.

Thank for considering the manuscript for submission to the **Journal of International Dental and Medical Research**.

Please feel free to contact me with any questions or concerns.

Best Regards,

Prof. Dr. Izzet YAVUZ

Dean of D.Ü. Faculty of Dentistry
Editor-in-Chief and General Director
Journal of International Dental and Medical Research ISSN 1309 - 100X

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Konu: Submission Manuscript JIDMR , Martono Tri Utomo, MD, Paed (C), Faculty of Medicine, Airlangga University

Dear Editor Staff
Journal of International Dental and Medical Research,

Please find the enclosed manuscript with titled "Zinc supplementation in cytokine regulation during LPS-induced sepsis in rodent." We sincerely hope this manuscript is considering appropriate for publication in the Journal of International Dental and Medical Research.

We declare that this manuscript attached was stated our original work and all authors have no conflict of interest.

Thank you for the attention.

On behalf of all authors,

Warm regards,

Martono

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D18_799_Martono_T_Utomo / Revision needs

3 messages

izzet yavuz <izzetyavuz@hotmail.com> Sun, May 12, 2019 at 3:35 AM
To: martono tri utomo <martono-t-u@fk.unair.ac.id>

Dear **Prof. Dr. Martono T Utomo,**

Your paper looking acceptable titled **" Zinc supplementation in cytokine regulation during LPS-induced sepsis in rodent ",** but it should be revise especially references section according to the JIDMR guidline http://www.jidmr.com/journal/author-guidelines/ .

All of the references section should be unique with a same character (Year; volume(No): page number).

Improve to the article with latest published articles, which some of reference samples are below.

It will be welcome if you cite some of them in your article.

After the revisions you can submit your paper.

Sincerely yours.

1. **The Influence of Smoking on IL-17 Cytokine in Chronic Periodontitis Patients**
   Eric Sulistio, Sri Lelyati C. Masulili, Robert Lessang, Elza Ibrahim Auerkari

Journal of International Dental and Medical Research: 2019; 12 (1)

Pages 199-202

2. **Inflammatory Cytokine Serum Levels in Sockets Following Extraction of Teeth with Apical Periodontitis**
   Meiny F. Amin, Ratna Meidyawati, Melanie S. Djamil, Benny S. Latief

Journal of International Dental and Medical Research: 2019; 12 (1)

Pages 129-132

3. **Shifting Immune Response and Cytokine Profiles After Porphyromonas gingivalis Lipopolysacaride Exposure**
   Nelwan SC, Endaryanto A, Harjanto JM, Pradopo S, Prawati N

Journal of International Dental and Medical Research 2017; 10 (1)
Pages 95-99

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martono tri utomo <martono-t-u@fk.unair.ac.id> Sat, Aug 17, 2019 at 9:33 AM
To: Mendeley <mrmartono73@gmail.com>

[Quoted text hidden]

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martono tri utomo <martono-t-u@fk.unair.ac.id> Mon, Aug 19, 2019 at 10:15 AM
To: izzetyavuz@hotmail.com, iyavuz@dicle.edu.tr

Dear ***Prof. Dr. Izzet YAVUZ***
Dean of D.Ü. Faculty of Dentistry
Editor-in-Chief and General Director
Journal of International Dental and Medical Research ISSN 1309 - 100X

We are sorry for the late reply, Thank you very much for your suggestions regarding our manuscript titled **" Zinc supplementation in cytokine regulation during LPS-induced sepsis in rodent " .** We have revised the reference according to JIDMR Guidelines and added the reference of **Amin MF, Meidyawati R, Djamil M, Latief B. Inflammatory Cytokine Serum Levels in Sockets Following Extraction of Teeth with Apical Periodontitis. J Int Dent Med Res. 2019;12(1):129–32.**
into our manuscript.

Hereby we attached the revised manuscript. Please contact me if you have any suggestion or question.
Thank you for your attention. We sincerely hope this manuscript is considering appropriate for publication in the Journal of International Dental and Medical Research.

We are looking forward to hearing from you.

Warm regards,

on behalf of all authors

Dr. Martono Tri Utomo.

[Quoted text hidden]

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Zinc supplementation in cytokine regulation during LPS-induced sepsis in rodent

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Faculty of Medicine, Universitas Airlangga

ABSTRACT

Background:

Severe sepsis increased pro-inflammatory cytokines and low Zinc levels were also found in patients with sepsis.

Objective

To explain the mechanisms of sepsis improvement after Zinc administration through cytokine regulations

Method:

Total sample of 40 rodents was randomized into 4 groups with treatment of LPS in LPS group and LPS-Zinc and placebo in Control and Zinc group, then followed by blood sampling at the second hour to measure Zinc level by AAS. Furthermore, in the LPS-Zinc and Zinc group, Zinc was administered orally, while the control and LPS group were given placebo orally. The blood samples were then collected at the 8^{th}, 24^{th}, and 72^{nd} hour to measure TNF-α, IL-6, IL-10, and TGF-β by sandwich-ELISA method and the Zinc content was also measured at the 72^{nd} hour using AAS. One-way Anova, Kruskall Wallis, Mann-Whitney, paired t-tests, and Wilcoxon Signed Rank Test were employed as statistical analyses.

Results

There were some decreases in the level of TNF-α and IL-6 plasma and an elevated levels of IL-10 and TGF-β in the LPS-Zinc group compared to the LPS group.

Conclusion

Administration of Zinc in sepsis improve sepsis condition through decreased pro-inflammatory cytokines (TNF-α and IL-6) and increased anti-inflammatory cytokines (IL-10 and TGF-β).

Keyword: Zinc, sepsis, cytokine

Introduction

Sepsis remains a world health problem due to its high mortality rate despite optimal therapy using antibiotics, fluids, and inotropes.[1,2] Mortality rate of sepsis in hospitals is approximately 15% among adults and 25% among children.[1,3] During sepsis, an increase in pro-inflammatory cytokines of IL-1β, IL-6, IL-8, IL-12, IFN, and TNF-α are associated with mortality in sepsis.[4] Low serum Zinc levels are also found in severe and critical sepsis among children and adults.[5–7] Zinc supplementation can reduce pro-inflammatory cytokines of IL-6, IL-8, and TNF-α.[5,8,9] In addition, during Zinc deficiency, there is also a low level of anti-inflammatory cytokines of I-4, IL-10 and TGF-β.[10] Several studies have shown that administration of Zinc for sepsis can be useful to reduce mortality rate.[11,12] This study aims to investigate the effect of Zinc on cytokine regulation under septic conditions.

Materials and methods

Animal studies

This study used a sample of 40 Spraque-Dawley rodents (10-12 weeks old) which were acclimated 2 weeks before treatment, given standard food, and grouped randomly into Control, LPS, LPS-Zinc, and Zinc groups (10 rodents in each group).

The administration of LPS *E coli* serotype O111: B4 from Sigma with a dose of 10 mg / kg (500 mg was prepared, yet only 100 mg was taken). Then it was diluted with 10 mL of aquabidest and injected intravenously in the tail of rodents in LPS group and LPS-Zinc group as much as 0.2 mL, whereas in the Control and Zinc groups, rodents were given

normal saline of 0.2 mL intravenously. In addition, in order to facilitate intravenous injection, 0.1 mL of ketamine was administered.

Zinc drop (10 mg/mL) (Zincpro® drop 15 mL, Combiphar Indonesia) was diluted to 1 mg/mL Zinc sulfate solution by adding 9 mL of aquabidest to every 1 mL Zinc drop. Two mg/kg of Zinc dose was to human body, or equivalent to 4.65 mg / kg of rodents' body weight. It was given to rodents via gastric tube to the LPS-Zinc and Zinc group with a dose of 1 mL for 3 days, while in the control and LPS groups, rodents were given a placebo aquabidest of 1 mL.

Blood sampling was conducted through rodents' tail for 5 rodents in each group at the second hour to analyze Zinc levels and at the 8^{th} and 24^{th} hours for the next 5 rodents in each group. Then at the 72^{nd} hour, we took blood from rodents' heart and aorta to analyze cytokines of TNF-α, IL6, IL10, and TGF-β. Examination of Zinc levels was also carried out at the 72^{nd} hour. Blood samples without EDTA were centrifuged at 6,000 G for 10 minutes and at 25 ^{o}C within 30 minutes, and then stored in a refrigerator at -20 ^{o}C until they were analyzed.

Plasma Zinc

Plasma Zinc was assayed by Atomic Absorption Spectrophotometry (AAS) methods that was used in the laboratory of Science and Technology, Brawijaya University. This methods had been described in the previous study (13).

Cytokine analysis

Measurements of cytokines. The concentrations of TNF-α, IL6, IL10, and TGF-β in the supernatant were measured by sandwich-ELISA, using a FineTest ELISA Kit manual instruction's from Wuhan Fine Biological Technology Co.,Ltd. This study was approved by the Ethical Commitee of the Brawijaya University Malang.

Statistical analysis

The data are expressed as means $\pm$ SDs. All data in 4 groups were compared using one-way Anova and post hoc test. If the data were not normally distributed, further Kruskal-

Wallis test was employed. The data in a group at the 8th, 24th, and 72nd hour were compared with same subject anova when the data distribution was normal, or Friedman anova if they were not normally distributed. The data of Zinc level at the 2nd and 72nd hours were analyzed with t-test dependent.

Results

During study, two rodents were dead in LPS group at the 8th and 24th hour. In this study the minimal sample for each group was 5 and duplicated to 10, because there was blood collection more than 2 times in 24 hours. Sample characteristics between groups were comparable, as depicted in Table 1 which shows that there is no differences in rodents' weight in 4 groups.

Table 1 Rodents' body weights in 4 groups

Group	n	Body weight (g)				p
		Mean	SD	Minimum	Maximum	
Control	5	221.40	6.50	213	229	0.34
LPS	5	240.80	10.50	225	253	
LPS-Zinc	5	226.60	19.46	208	256	
Zinc	5	232.80	24.81	201	263	

LPS E Coli administration influences plasma Zinc level

The effects of intravenous LPS *E Coli* on Zinc levels are illustrated in Table 2. Giving intravenous LPS *E Coli* to the LPS and LPS-Zinc groups can reduce Zinc levels below normal levels with normal values of Zinc levels 0.84-1.59 mg / L, though there are no differences between the four groups. Increased Zinc levels were found in the LPS, LPS-Zinc, and Zinc groups at the 72nd hour. The increase Zinc levels in the LPS and LPS-Zinc groups illustrated some fluctuations in Zinc levels during sepsis condition. While for the case of Zinc group, it proved that giving Zinc supplementation for 3 days could increase

Zinc levels. Zinc levels at the 72nd hour of the control group, LPS, and LPS-Zinc were not significantly different, which showed fluctuations in Zinc levels during sepsis.

Table 2. Plasma Zinc at the 2nd and 72nd hour after LPS *E coli* administration

Group	n	Plasma Zinc (mg/L)		p
		2 hours	72 hours	
Control	5	0.87 ± 0.09 (0.75-0.97)	0.91 ± 0.22[a] (0.57-1.19)	0.67
LPS	5	0.62 ± 0.21 (0.42-0.97)	1.14 ± 0.24[a] (0.94-1.54)	0.04†
LPS-Zinc	5	0.75 ± 0.06 (0.71-0.86)	0.99 ± 0.07[a] (0.94-1.11)	0.04†
Zinc	5	0.87 ± 0.18 (0.62-1.12)	1.49 ± 0.17[b] (1.33-1.74)	0.001†
p		0.07	0.001*	

* Significant at α=0.05 (One way Anova)

† Significant at α=0.05 (Paired t-test / Wilcoxon Signed Rank Test)

[a,b] Same superscript in the column revealed no difference between groups (multiple comparisons LSD)

Zinc supplementation reduces the pro-inflammatory cytokine

Modeling of sepsis experimental animals in this study using intravenous injection of LPS *E coli* was successful, which was characterized by an inflammatory response in the form of high levels of pro-inflammatory cytokines of TNF-α and IL-6 in the LPS and LPS-Zinc groups compared to the control group. Zinc supplementation reduced levels of pro-inflammatory cytokines of TNF-α and IL-6 in septic experimental animals, which was seen from the lower levels of pro-inflammatory cytokines in the LPS-Zinc group compared to LPS at the 8th, 24th, and 72nd hour. TNF cytokine values -α of the LPS group fluctuated at

8th, 24th, and 72nd hour. Similar occurrence also happened in the control group.While the cytokine values of IL-6 in LPS and LPS-Zinc groups fluctuated at the 8th, 24th, and 72nd hour, peaking at the 24th hour and sloping down at the 72nd hour. These results are illustrated in Tables 3 and 4.

Table 3. TNF-α plasma concentration at 8th, 24th, and 72nd hours

Group	**n**	**TNF-α plasma concentration (pg/mL)**			**p**
		8th hour	**24th hour**	**72nd hour**	
Control	5	79.95 ± 2.04[a] (76.55-81.55)	81.55 ± 1.30[a] (80.55-84.05)	76.35 ± 3.19[a] (71.55-80.55)	0.029†
LPS	5	122.55 ± 11.40[c] (111.55-136.55)	110.05 ± 5.48[c] (106.55-119.05)	108.05 ± 4.87[d] (101.55-114.05)	0.034†
LPS-Zinc	5	92.75 ± 1.25[b] (91.55-94.55)	95.35 ± 2.17[b] (91.55-96.55)	93.35 ± 2.49[c] (91.55-96.55)	0.211
Zinc	5	77.85 ± 4.15[a] (71.55-81.55)	76.55 ± 6.12[a] (71.55-86.55)	82.35 ± 4.27[b] (76.55-86.55)	0.101
p		0.000*	0.001*	0.001*	

Note:

* Significant at α=0.05 (Brown-Forsythe/Kruskal-Wallis)

† Significant at α=0.05 (Same subject Anova/Anova Friedman)

[a,b,c,d] Same superscript in the column revealed no difference between groups (*multiple comparisons* Games-Howell/Mann-Whitney)

Table 4 IL-6 plasma concentration at the 8th, 24th, and 72nd hour

Group	n	IL-6 plasma concentration (pg/mL)			p
		8th hour	24th hour	72nd hour	
Control	5	1.58 ± 0.09[a] (1.42-1.64)	1.39 ± 0.11[a] (1.31-1.55)	1.57 ± 0.05[a] (1.53-1.63)	0.091
LPS	5	4,91 ± 0,40[c] (4.25-5.21)	5.57 ± 0.16[d] (5.54-5.93)	3.39 ± 0.38[c] (3.09-4.05)	0.000†
LPS-Zinc	5	2.15 ± 0.09[b] (2.06-2.25)	3.83 ± 0.19[c] (3.64-4.11)	2.51 ± 0.15[b] (2.34-2.74)	0.000†
Zinc	5	2.10 ± 0.17[b] (1.91-2.27)	2.21 ± 0.44[b] (1.81-2.72)	1.84 ± 0.26[a] (1.55-2.14)	0.304
p		0.000*	0.000*	0.001*	

Note:

* Significant at α=0.05 (Brown-Forsythe/Kruskal-Wallis)

† Significant at α=0.05 (Same subject Anova)

[a,b,c,d] Same superscript in the column revealed no difference between groups (*multiple comparisons* Games-Howell/Mann-Whitney)

Zinc supplementation increases anti-inflammatory cytokine

In contrast to pro-inflammatory cytokines, Zinc increases anti-inflammatory cytokines of IL-10 and TGFβ. There were higher levels of IL-10 and TGF-β in the LPS-Zinc group than in the LPS group at the 8th, 24th, and 72nd hour. The IL-10 levels of LPS and LPS-Zinc groups fluctuated at the highest levels at the 24th hour. TGF-β level of the LPS group was also fluctuated with the same pattern, while the TGF-β level of the LPS-Zinc group found a different pattern, namely there was a gradual increase from the 8th to the 72nd hour.

Table 5. IL-10 plasma concentration at 8th, 24th, and 72nd hours

Group	n	IL-10 plasma concentration (pg/mL)			p
		8th hour	**24th hour**	**72nd hour**	
Control	5	1.27 ± 0.04[a] (1.24-1.34)	1.37 ± 0.08[a] (1.31-1.46)	1.38 ± 0.05[a] (1.33-1.44)	0.07
LPS	5	2.12 ± 0.21[b] (1.83-2.33)	3.83 ± 0.32[c] (3.37-4.11)	2.17 ± 020[c] (1.95-2.48)	0.000†
LPS-Zinc	5	2.96 ± 0.52[b] (2.38-3.78)	5.16 ± 0.56[d] (4.52-5.74)	4.06 ± 0.57[d] (3.26-4.51)	0.002†
Zinc	5	2.11 ± 0.29[b] (1.85-2.54)	1.99 ± 0.39[b] (1.65-2.64)	1.63 ± 0.14[b] (1.51-1.87)	0.06
p		0.000*	0.000*	0.000*	

Note :

* Significant at α=0.05 (Brown-Forsythe/Kruskal-Wallis)

† Significant at α=0.05 (Same subject Anova)

[a,b,c,d] Same superscript in the column revealed no difference between groups (*multiple comparisons* Games-Howell/Mann-Whitney)

Table 6. TGF-β plasma concentration at the 8th, 24th, and 72nd hour

Group	n	TGF-β plasma concentration (pg/mL)			p
		8th hour	24th hour	72nd hour	
Control	5	0.80 ± 0.03[a] (0.76-0.84)	0.85 ± 0.06[a] (0.76-0.92)	0.77 ± 0.03[a] (0.74-0.83)	0.08
LPS	5	1.75 ± 0.09[b] (1.64-1.87)	2.02 ± 0.38[c] (1.68-2.59)	1.98 ± 0.29[c] (1.60-2.39)	0.35
LPS-Zinc	5	2.59 ± 0.24[c] (2,37-2.97)	3.95 ± 0.27[d] (3.73-4.42)	4.74 ± 0.25[d] (4.40-4.98)	0.000†
Zinc	5	1.73 ± 0,17[b] (1.57-1.97)	1.65 ± 0.20[b] (1.48-1.90)	1.37 ± 0.16[b] (1.21-1.55)	0.05
p		0.000*	0.000*	0.000*	

Note :

* Significant at α=0.05 (Brown-Forsythe/Oneway Anova)

† Significant at α=0.05 (Same subject Anova)

[a,b,c,d] Same superscript in yhr column revealed no difference between groups (*multiple comparisons* Games-Howell/LSD)

Discussion

This study showed some improvements in sepsis in terms of decreased inflammatory response in the form of decreasing pro-inflammatory cytokines (IL-6 and TNF-α) and increasing anti-inflammatory cytokines (IL-10 and TGF-β). This study is different from previous studies for rodent which were given Zinc before being induced to sepsis by CLP. In the previous study, similar results were obtained in the form of a decrease in pro-inflammatory cytokines of IL-6 and IL-1β.[14] In this study, sepsis was modeled in experimental animals by administering

intravenous LPS *E. Coli.* The use of intra-venous LPS *E Coli* as a sepsis experiment in animal model was similarly used in previous studies, resulting in the increase of pro-inflammatory cytokines.[15,16] The successful use of LPS *E coli* for the inflammatory reaction caused by sepsis in animal models in this study was demonstrated by an increase in pro-inflammatory cytokines (TNF-α and IL-6) and anti-inflammatory cytokines (IL-10 and TGF-β). An increase in pro-inflammatory cytokines (TNF-α and IL-6) and anti-inflammatory cytokines (IL-10 and TGF-β) are associated with the worsening or progression of sepsis.[17] Increasing pro-inflammatory cytokine TNF-α and IL-6 are also occured in local infection such as periodontitis.[18]

The decrease in plasma Zinc level in two hours after the administration of LPS *E coli* in the LPS and LPS-Zinc groups in this study was not as large as the decrease in plasma Zinc levels in sepsis and critical conditions in the previous study (45-48 μg / dL).[5–7] In this study, the mean Zinc level in the LPS group was 0.62 mg/L or 62 μg /dL and the mean LPS-Zinc group's Zinc level was 0.75 mg /L or 75 μg/dL which was included in Zinc deficiency criteria according to the normal Zinc levels of 84 - 159 μg / dL.[18] While in the control and Zinc groups, there were normal Zinc levels, though there were no differences with the LPS and LPS-Zinc groups. For this study, symptoms of sepsis might be triggered by intravenous LPS *E coli* and did not cause severe sepsis symptoms. Low Zinc levels in sepsis, which were found in patients with severe and critical sepsis in children and adults, were associated with mortality.[5–7] Blood's low Zinc levels in sepsis are caused by the influence of pro-inflammatory cytokines (namely IL1β and IL-6) which activate STAT mediated signals and upregulation of ZIP14 and ZIP 6; then, they also trigger intracellular blood Zinc influx (20). Low Zinc levels and increase in cytokines of

IL-6, IL-8, IL-1 TN, and TNF-α occur more frequently in sepsis, compared to healthy individuals.[5]

Increased levels of TNF-α are found in sepsis and associated with shock, coagulopathy, death, and survival. TNF-α is also used as a sepsis diagnosis and evaluation of therapy in sepsis.[20] TNF-α has an important role in inflammation. Moreover, rhTNF's administration in experimental animals can cause symptoms of hypotension, metabolic acidosis, massive pulmonary hemorrhage, acute tubular necrosis in kidney, and gastrointestinal bleeding lesions.[21,22] TNF-α levels in experimental animals injected with LPS *E coli* and oral Zinc administration was lower than the experimental group injected with LPS *E coli* and given placebo in this study. The decrease in TNF-α in the group given Zinc was also found in previous studies, such as in cases of diarrhea in children,[23] sepsis in rodents as animal model,[9] sickle-cell disease,[24] and incidence of infection among elderly.[25]

Increase in IL-6 occurs in SIRS conditions associated with infection and mortality.[26,27] Increase in IL-6 in severe sepsis causes an increase in capillary leak and a decrease in intestinal contractions.[28,29] The administration of Zinc in this study reduced IL-6 level in experimental animal groups which were injected with intravenous LPS *E coli* and Zinc, compared to the experimental group which was only injected with LPS *E coli*.

IL-10 and TGF-β are anti-inflammatory cytokines secreted by Treg. Previous study showed that giving Zinc to healthy people for 10 days can induce Treg.[30] IL-10, which was secreted by Treg, inhibits Th1, so pro-inflammatory cytokines from Th1 are reduced.[31] In this study, an increase in IL-10 in the LPS-Zinc group was higher than the LPS group. It indicated that Zinc's effect on the increase in IL-10 cytokines already occurred at the 8th hour. In the previous study, there was an

increase after 10 days of Zinc administration, because no analysis was performed at an earlier hour.[30] Increased TGF-β secretion, which is an anti-inflammatory cytokine secreted by Treg, occurs in the LPS-Zinc group compared to the LPS group. Giving Zinc can increase TGF-β1, elevation of intestinal villi, and ratio villi crypt in the intestine, so that it can improve intestinal permeability.[32] TGF-β can inhibit TNF-α cytokines through translated inhibition of TNF mRNA.[33]

Conclusion

Administration of Zinc in sepsis can improve sepsis condition through cytokine regulation in the form of decreased pro-inflammatory cytokines (TNF-α and IL-6) and increased anti-inflammatory cytokines (IL-10 and TGF-β).

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martono tri utomo <martono-t-u@fk.unair.ac.id>

D18_799_Martono_T_Utomo / Accept letter

2 messages

izzet yavuz <izzetyavuz@hotmail.com> Tue, Aug 20, 2019 at 3:11 AM
To: martono tri utomo <martono-t-u@fk.unair.ac.id>

Subject: Your article has been accepted for Publication**. (Martono T Utomo, Subijanto M Sudarmo, Ketut Sudiana, "Zinc supplementation in cytokine regulation during LPS-induced sepsis in rodent")**

Dear Prof. Dr. Martono T Utomo,

It's a great pleasure for me to inform you that your manuscript which titled **"Zinc supplementation in cytokine regulation during LPS-induced sepsis in rodent "** has been accepted and will be finalized for **issue 2020; volume 13 number 1** which will be released in late March 2020 or earl April 2020**.**

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Prof. Dr. Izzet YAVUZ
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martono tri utomo <martono-t-u@fk.unair.ac.id> Thu, Sep 12, 2019 at 9:33 AM
To: izzet yavuz <izzetyavuz@hotmail.com>

Dear *Prof. Dr. Izzet YAVUZ*

D.Ü. Dekanı Diş Hekimliği Fakültesi

Thank you very much for the acceptance letter. We will proceed with the payment and send you the copyright of transfer.

Thank you very much for your cooperation.

Warm regards,

Martono

Department of Pediatrics

Faculty of Medicine, Universitas Airlangga, Surabaya, Indonesia

[Quoted text hidden]

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martono tri utomo <martono-t-u@fk.unair.ac.id>

PAYMENT RECEIPT / D18_799_Martono_T_Utomo

1 message

martono tri utomo <martono-t-u@fk.unair.ac.id> Tue, Sep 17, 2019 at 3:26 PM
To: izzet yavuz <izzetyavuz@hotmail.com>

Dear *Prof. Dr. Izzet YAVUZ*

D.Ü. Dekanı Diş Hekimliği Fakültesi

Thank you for your acceptance letter regarding my submission entitled: **"Zinc supplementation in cytokine regulation during LPS-induced sepsis in rodent".** I am grateful that we will able to publish our manuscript in **Journal of International Dental and Medical Research.**

I have paid the publication fee as amount **600 US$.** Hereby, I attach you the payment receipt for your reference.

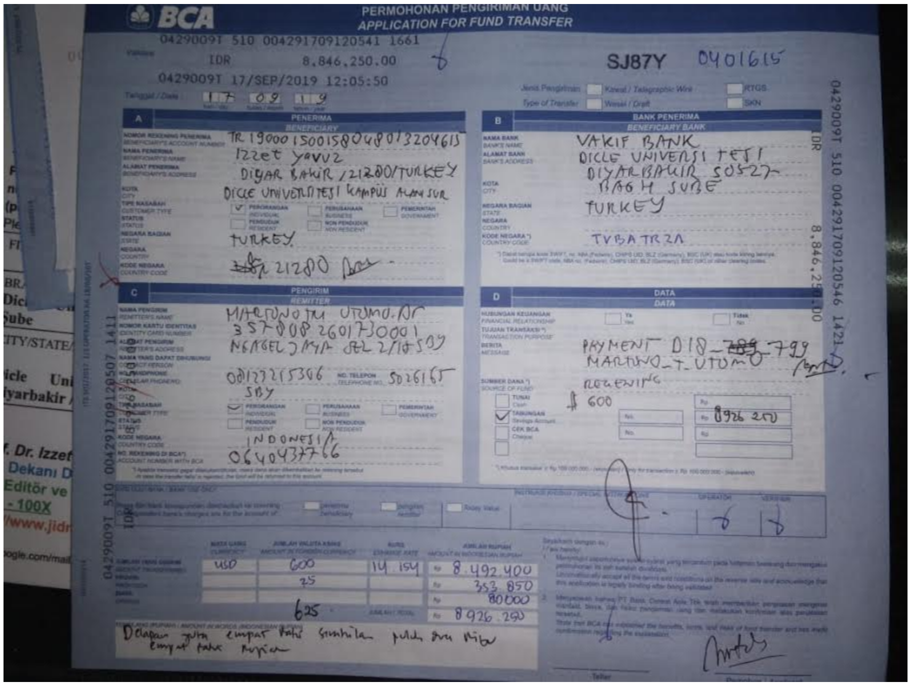
Thank you very much for your cooperation.

Warm regards,

Martono

Department of Pediatrics

Faculty of Medicine, Universitas Airlangga, Surabaya, Indonesia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1 message

izzet yavuz <izzetyavuz@hotmail.com> Fri, Sep 20, 2019 at 1:27 AM
To: martono tri utomo <martono-t-u@fk.unair.ac.id>

Dear **Prof. Dr. Martono T Utomo,**

Thank you very much for complete to the publication process.

Your article " **Zinc supplementation in cytokine regulation during LPS-induced sepsis in rodent",** will be publish at the **issue 2020; volume 13 number 1,**which will be released in late March 2020 or earl April 2020.

Before sending manuscript to press, I will send to you the press ready copy for your final checking.

Sincerely yours.

Prof. Dr. Izzet YAVUZ
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1 message

izzet yavuz <izzetyavuz@hotmail.com> Tue, Mar 31, 2020 at 4:40 PM
To: martono tri utomo <martono-t-u@fk.unair.ac.id>

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If the Editor does not hear from you within three days, your article will be published as it was originally submitted.

I look forward to receiving your corrected proof.

Sincerely yours,

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