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## Indian Journal of Forensic Medicine and Toxicology

CiteScore 2020

0.1



Scopus coverage years: from 2008 to 2021

(coverage discontinued in Scopus)

Publisher: Medico Legal Society

SJR 2020

0.115



ISSN: 0973-9122 E-ISSN: 0973-9130

Subject area: Social Sciences: Law Medicine: Pathology and Forensic Medicine

Pharmacology, Toxicology and Pharmaceutics: Toxicology Environmental Science: Health, Toxicology and Mutagenesis

SNIP 2021

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#### COUNTRY

India



Universities and research  
institutions in India

#### SUBJECT AREA AND CATEGORY

Environmental  
Science  
Health,  
Toxicology and  
Mutagenesis

Medicine  
Pathology and  
Forensic  
Medicine

Pharmacology,  
Toxicology and  
Pharmaceutics  
Toxicology

Social Sciences  
Law

#### PUBLISHER

Institute of Medico-  
legal Publications

#### H-INDEX

12

#### PUBLICATION TYPE

Journals

#### ISSN

09739122,  
09739130

#### COVERAGE

2008-2021

#### INFORMATION

[Homepage](#)

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this journal](#)

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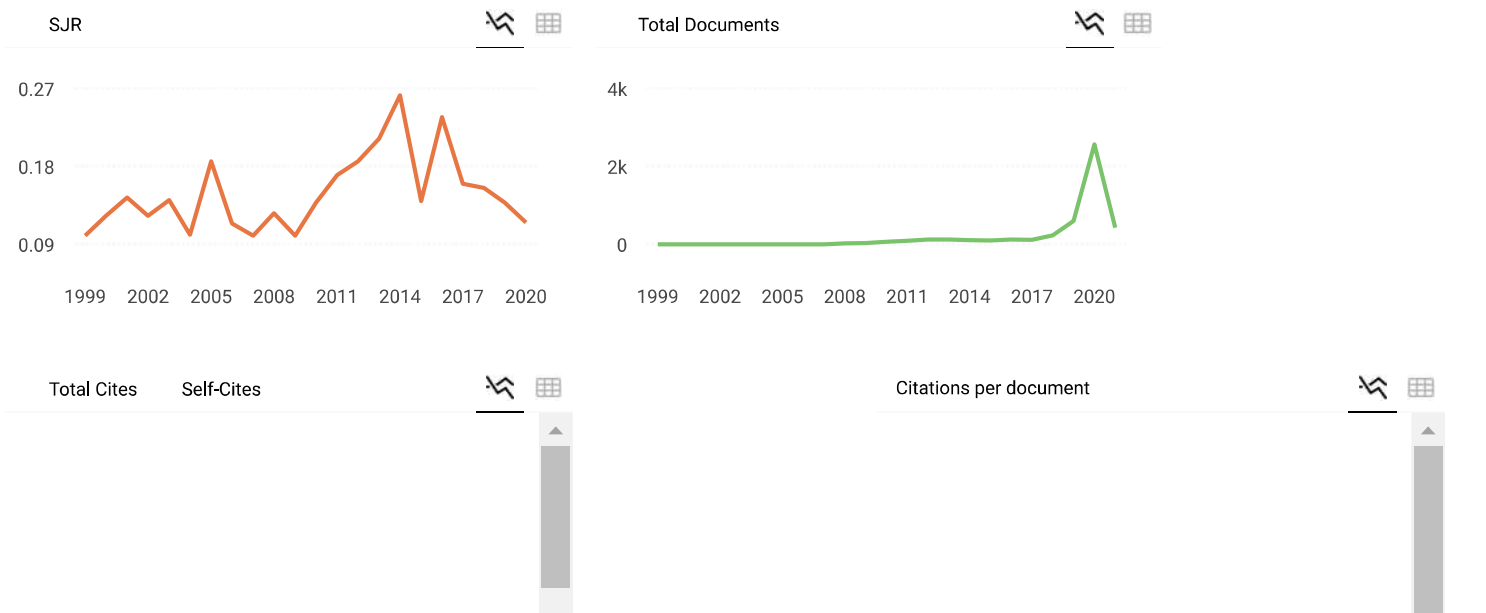
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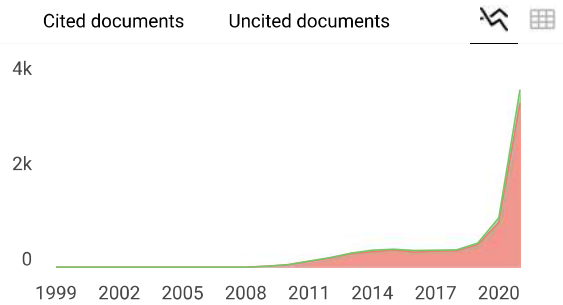
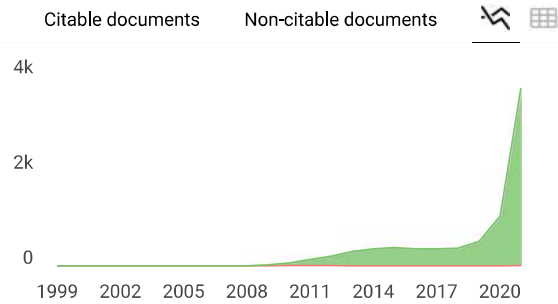
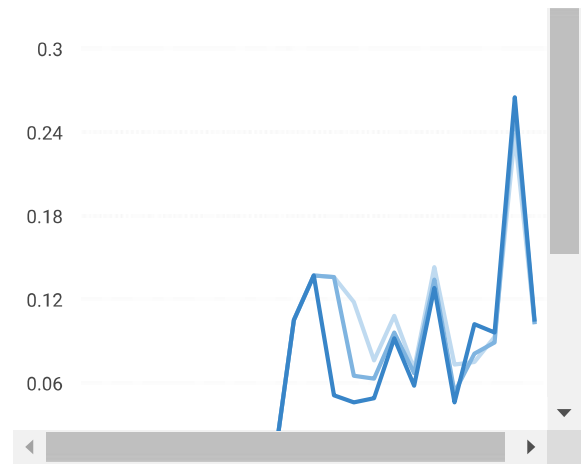
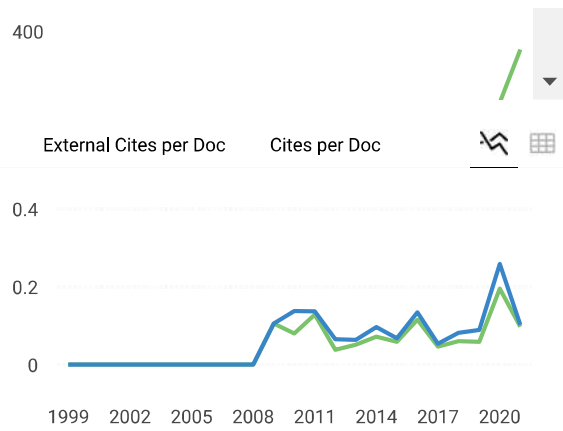
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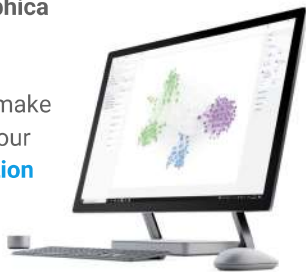
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**D** **Dr.Wiaam** 8 months ago

Dear sir,

What is the impact factor of the Indian Journal of Forensic Medicine

reply



**Melanie Ortiz** 7 months ago

SCImago Team

Dear Dr.Wiaam, thank you very much for your comment. SCImago Journal and Country Rank uses Scopus data, our impact indicator is the SJR (Check it on our website). We suggest you consult the Journal Citation Report for other indicators (like Impact Factor) with a Web of Science data source. Best Regards, SCImago Team

**E** **Essam Fadel Al-Jumaili** 1 year ago

Dear sir

Is the Journal in Scopes because I want published my new paper in it. Thank you.

reply



**Melanie Ortiz** 1 year ago

SCImago Team

Dear Essam,  
Thank you very much for your comment.  
All the metadata have been provided by Scopus /Elsevier in their last update sent to SCImago, including the Coverage's period data. The SJR for 2020 has been released on 17 May 2021. We suggest you consult the Scopus database directly to see the current index status as SJR is a static image of Scopus, which is changing every day.  
Best Regards, SCImago Team

A **anas khaleel** 1 year ago

dear

editor says it is no longer in scopus?

is that true?

since May 10, 2021?

best

reply

A **ahmed ali** 1 year ago

Are you asking or giving us information?



**Melanie Ortiz** 1 year ago

SCImago Team

Dear Anas,  
Thank you very much for your comment.  
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Best Regards, SCImago Team

A **Aloto Ximenes Belo Amaral** 2 years ago

hello sir/madam,

indian journal of forensic medicine and toxicology 'Coverage 2008-2019'  
is the journal out of Scopus? or someother reason?

thank you and please let me know.



reply



**Melanie Ortiz** 1 year ago

SCImago Team

Dear Aloto,

Thank you very much for your comment.

All the metadata have been provided by Scopus /Elsevier in their last update sent to SCImago, including the Coverage's period data. The SJR for 2019 was released on 11 June 2020. We suggest you consult the Scopus database directly to see the current index status as SJR is a static image of Scopus, which is changing every day.

Best Regards, SCImago Team

**S** **sekar anggung gp** 2 years ago

how can i see the impact factor of Indian Journal of Forensic Medicine

reply



**Melanie Ortiz** 2 years ago

SCImago Team

Dear Sekar, thank you very much for your comment. SCImago Journal and Country Rank uses Scopus data, our impact indicator is the SJR (Check it on our website). We suggest you consult the Journal Citation Report for other indicators (like Impact Factor) with a Web of Science data source. Best Regards, SCImago Team

**M** **Muna** 2 years ago

Please which Q the journal havr? At 2020

reply



**Melanie Ortiz** 2 years ago

SCImago Team

Dear Muna,

Thank you for contacting us. Our data come from Scopus, they annually send us an update of the data. This update is sent to us around April / May every year. The SJR for 2019 was released on June 2020, 11. Thus, the indicators for 2020 will be available in June 2021 and before that date we can't know what will happen with this journal.

Best Regards, SCImago Team

**A** **Ali Al-Saffar** 2 years ago

Dear Sir/Madam

Are the articles published in this journal covered by SCImago? In SCOPUS web site they already covered.

Regards

Ali

reply



**Melanie Ortiz** 2 years ago

SCImago Team

Dear Ali,

Thank you for contacting us. SCImago doesn't index particular articles but journals. All the Scopus data are sent to SCImago in April/May every year.

Best Regards, SCImago

J

**j. toma** 2 years ago

hello dear

Is the journal out of Scopus because it is written until 2019 in scopus??

thank you

reply



**Melanie Ortiz** 2 years ago

SCImago Team

Dear Sir/Madam,

Thank you very much for your comment.

All the metadata have been provided by Scopus /Elsevier in their last update sent to SCImago, including the Coverage's period data. The SJR for 2019 was updated on June 2020, 11th. We suggest you consult the Scopus database directly to see the current index status as SJR is a static image of Scopus, which is changing every day.

Best Regards, SCImago Team

F

**Farida** 2 years ago

In scopus coverage of this journal it's showing "Coverage: 2008-2019, what does this mean did the Indian Journal of Forensic Medicine and Toxicology lost scopus or discontinued after 2019? Or someother reason?

Can you please let me know that this having still scopus coverage for 2020 or not?

reply



**Melanie Ortiz** 2 years ago

SCImago Team

Dear Farida,

Thank you very much for your comment.

All the metadata have been provided by Scopus /Elsevier in their last update sent to SCImago, including the Coverage's period data. The SJR for 2019 was updated on June 2020, 11th. We suggest you consult the Scopus database directly to see the current index status as SJR is a static image of Scopus, which is changing every day.

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**M muhaned Mohammed Eteya** 2 years ago

Hello Doctor I want to publish my research in your magazine, how long is the period of acceptance of publication, the period of publication, how many days, and what is the amount of publication in it

reply



**Melanie Ortiz** 2 years ago

SCImago Team

Dear Muhaned,

thank you for contacting us.

We are sorry to tell you that SCImago Journal & Country Rank is not a journal. SJR is a portal with scientometric indicators of journals indexed in Elsevier/Scopus.

Unfortunately, we cannot help you with your request, we suggest you visit the journal's homepage or contact the journal's editorial staff , so they could inform you more deeply.

Best Regards, SCImago Team

**S S.MM** 2 years ago

Dear sir/madam

As i am responsible in my university for checking the originality of the journals where our researchers published their researches, after evaluation of this journal, i found it fits with a lot of predatory criteria, riddled with scientific, grammatical and spelling mistakes, and seems that most of the published articles in this journal did not subjected to evaluation or review by reputed reviewers. I couldn't understand why , Scopus index and SCImago didn't reevaluate this journal and reconsider it again.

Regards

reply



**Melanie Ortiz** 2 years ago

SCImago Team

Dear Salah,

Thank you for contacting us.

SJR is a portal with scientometric indicators of journals indexed in Scopus. All the data have been provided by Scopus /Elsevier and SCImago doesn't have the authority over this data which are property of Scopus/Elsevier. SCImago has a signed agreement that limits our performance to the generation of scientometric indicators derived from the metadata sent in the last update. We suggest you to contact with Scopus support regarding this matter here:

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Best Regards, SCImago Team

**D** **Dr Hama** 3 years ago

Dear Sir can you please tell me about this journal it has same name with your journal are it possible?

Indian Journal of Forensic Medicine

reply



**Melanie Ortiz** 3 years ago

SCImago Team

Dear Hama,

Could you please expand a little bit your comment? Best Regards, SCImago Team

**A** **Aqeel A. Alsadawi** 3 years ago

Hello, I am the researcher Aqeel.

A research has been published in your journal entitled (Treatment and experimental infection with Klebsiella pneumoniae in Rats)

It has not yet appeared on the Scopus page. Please reply to this message to find out the reason

reply



**Melanie Ortiz** 3 years ago

SCImago Team

Dear Aqueel,

thank you very much for your comment, unfortunately we cannot help you with your request. We suggest you to contact directly with Scopus support:

[https://service.elsevier.com/app/answers/detail/a\\_id/14883/kw/scimago/supporthub/scopus/](https://service.elsevier.com/app/answers/detail/a_id/14883/kw/scimago/supporthub/scopus/)

Best Regards, SCImago Team

**D** **Dr. Fouad Fadhil Al-Qaim** 3 years ago

Dear Sir/Madam

I have only one question.

How does the same journal gather between science and social science (toxicology and law)?

Please can you explain, why it was considered in SJR data base?

Thank you

reply



**Melanie Ortiz** 3 years ago

SCImago Team

Dear Fouad,

Thank you for contacting us.

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Best Regards, SCImago Team

**A** **aarti** 3 years ago

sir I want to publish my article and I have prepared accordinly but not able to find the copyright form. please help

reply

**B** **Bahram** 3 years ago

Hello my dear

Please answer my questions

1 - On what bases does your magazine index? (ISI. Pub med or Scopus)?

2 - How many weeks is the maximum arbitration time? Is it possible to make quick judgments?

3 - How much does it cost to print an article?

Thank you

reply

H **hanaa** 3 years ago

Hello dear: When will the 14th volume of the Indian Journal of Forensic Medicine and Toxicology be published?



**Melanie Ortiz** 3 years ago

SCImago Team

Dear Hanaa,  
thank you for contacting us.  
Unfortunately, we cannot help you with your request, we suggest you to visit the journal's homepage or contact the journal's editorial staff , so they could inform you more deeply.  
Best Regards, SCImago Team



**Melanie Ortiz** 3 years ago

SCImago Team

Dear Bahram,,  
thank you for contacting us.  
We are sorry to tell you that SCImago Journal & Country Rank is not a journal. SJR is a portal with scientometric indicators of journals indexed in Elsevier/Scopus. We suggest you to consult Scopus and/or other databases to know where is this journal indexed in. You can also check that information in the journal's website or contact directly with the editorial staff. For further information about this journal, please visit the journal's website. Best Regards, SCImago Team

A **AUTHOR** 3 years ago

is this journal still under scopus..??

reply

T **Tri Astuti Sugiyatmi** 1 year ago

After May 2021, is this journal still indexed by Scopus?

Warm Regard

Tri



**Melanie Ortiz** 1 year ago

SCImago Team

Dear Tri Astuti,  
Thank you very much for your comment.  
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SCImago, including the Coverage's period data. The SJR for 2020 has been released on 17 May 2021. We suggest you consult the Scopus database directly to see the current index status as SJR is a static image of Scopus, which is changing every day.

Best Regards, SCImago Team

R **Raian Zobi** 1 year ago

Is journal still under scopus?



**Melanie Ortiz** 1 year ago

SCImago Team

Dear Raian,

Thank you very much for your comment.

All the metadata have been provided by Scopus /Elsevier in their last update sent to SCImago, including the Coverage's period data. The SJR for 2020 has been released on 17 May 2021. We suggest you consult the Scopus database directly to see the current index status as SJR is a static image of Scopus, which is changing every day.

Best Regards, SCImago Team



**Melanie Ortiz** 3 years ago

SCImago Team

Dear Sir/Madam, thank you very much for your comment, unfortunately we cannot help you with your request. We suggest you to consult the Scopus database directly. Keep in mind that the SJR is a static image (the update is made one time per year) of a database (Scopus) which is changing every day.

Best Regards, SCImago Team

D **Dr. Shalender Kumar, MD (FM)** 4 years ago

Sir, I want to submit my manuscript for publication in your journal. So sir on which mail id I can do it sir. Kindly guide me sir. Thanks and regards.

reply



**Elena Corera** 4 years ago

SCImago Team

Dear Dr Shalender,

thank you very much for your comment, unfortunately we cannot help you with your request. We suggest you check author's instructions in journal website. You can find that information in SJR website <https://www.scimagojr.com>

Best Regards,  
SCImago Team

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ISSN-0973-9122 (Print) • ISSN-0973-9130 (Electronic)

Volume 15

Number 3

July-September 2021



# Indian Journal of Forensic Medicine & Toxicology

Website: [www.ijfmt.com](http://www.ijfmt.com)

Official Organ of Indian Association of Medico-Legal Experts (Regd.)



# Indian Journal of Forensic Medicine & Toxicology

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"Indian Journal of Forensic Medicine & Toxicology" is peer reviewed quarterly journal. It deals with Forensic Medicine, Forensic Science, Toxicology, DNA fingerprinting, sexual medicine and environment medicine. It has been assigned International standard serial No. p-0973-9122 and e- 0973-9130. The Journal has been assigned RNI No. DELENG/2008/21789. The journal is indexed with Index Copernicus (Poland) and is covered by EMBASE (Excerpta Medica Database). The journal is also abstracted in Chemical Abstracts (CAS) database (USA). The journal is also covered by EBSCO (USA) database. The Journal is now part of UGC, DST and CSIR Consortia. It is now official publication of Indian Association of Medico-Legal Experts (Regd.).

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Print-ISSN:0973-9122 Electronic - ISSN: 0973-9130

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#### Printed, published and owned by

**Dr. R.K. Sharma**  
Institute of Medico-legal Publications  
Logix Office Tower, Unit No. 1704, Logix City Centre Mall, Sector- 32, Noida  
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#### Published at

**Institute of Medico-legal Publications**  
Logix Office Tower, Unit No. 1704, Logix City Centre Mall, Sector- 32, Noida  
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# Correlation of Hematological Parameters on Maternal and Pediatric Leprosy Immunity Ratio: A Study in Endemic Areas in East Java, Indonesia

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## Abstract

**Background:** Leprosy is chronic infectious disease caused by *Mycobacterium leprae*. Endemic areas still existed with stable number of new cases including new cases of pediatric leprosy and female leprosy cases. Close contact and women's role in household increase the risk of transmission of leprosy to their children. Population lived in endemic areas are prone to contract leprosy due to dysregulation of immune system. This study aims to analyze correlation of hematological parameters and immunity ration in maternal and pediatric leprosy in endemic areas.

**Methods:** This is a cross-sectional study in endemic areas in Tuban Regency, East Java Province, Indonesia. The blood sample was taken from the subjects and underwent complete hematological parameter test (hemoglobin, red blood cells, white blood cells, platelets, hematocrit) and measurement of T cells activity ratio (Th1/Th2 ratio and Th17/Treg ratio) by ELISA. Correlation test was done between blood test results and the immunity ratio of maternal and pediatric leprosy in endemic areas.

**Results:** 33 pairs of maternal and pediatric leprosy cases were analyzed. This study found correlation between RBC ( $p$  value= 0.029) and HCT ( $p$  value= 0.038) with Th17/Treg ratio in children population. No significant results observed in mothers population.

**Conclusion:** The result of this study shows that hematological parameters (HB and HCT) related to the Th17/Treg ratio and could play roles in the incidence of dysregulation of immune system in children leprosy.

**Keywords:** Hemoglobin, Hematocrit, Maternal, Pediatric, Leprosy, Endemic

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## Introduction

Leprosy is a chronic infectious disease caused by *Mycobacterium leprae* and considered as one of neglected tropical disease.<sup>1</sup> Leprosy remains to be a significant health burden in some endemic countries, namely Brazil, India, or Indonesia that accountable for 80% global leprosy cases.<sup>2</sup> Indonesia is one of the biggest endemic countries located in South East Asia.



Leprosy endemic areas in Indonesia is mainly located in the eastern part of the country. Based on Indonesia health profile on 2019, East Java province has the highest number of leprosy cases in Sumatera and Java Island with 2,940 cases.<sup>3</sup> Tuban Regency is one of leprosy endemic pocket in East Java Province with relatively stable of new cases findings in the last five years with 159 new leprosy cases in 2019.<sup>4</sup>In 2019, Indonesia had reported 19,938 cases, in which 17,439 were new cases consisted of 10,741 female leprosy cases (61.59%) and 2,009 (11.52%) of child leprosy.<sup>3</sup>

Children are believed to be the most vulnerable group to leprosy infection due to their immature immunity.<sup>5</sup>The constant number of new leprosy cases including pediatric leprosy cases in children aged below 15 years old indicates underdiagnosed cases in the community, active infection states and the failure to stop leprosy transmission.<sup>6</sup> Close household contacts with leprosy patient was amongst the contract leprosy and the position of women and their role within family increases the risk of leprosy transmission to their child.<sup>5</sup>The termination of leprosy transmission depends on several aspects such as microbiological aspects, environmental factors, and immunological aspect.<sup>7,8</sup>

A good immune system needs to be nourished from the beginning of life by improving perinatal health status of both mother and child.<sup>5</sup>Previously, four subset of T cells, namely Th1, Th2, Th17, and Treg were known to play roles in human immune response against leprosy.<sup>9</sup>The imbalance activity of these cells, called dysregulation of immune system, was associated to higher risk of leprosy infections.<sup>10-13</sup>Population lived in endemic areas become more vulnerable to contract leprosy due to dysregulation of immune system that makes leprosy transmission easier.<sup>9</sup>

Previous studies used immunity ratio to show immunity status with comparing the T cells ratio, such as Th17/Treg (IL-17/ FOXP3+) or Th1/Th2(IFN- $\gamma$ /IL-4).<sup>14-16</sup>Hematological parameter is one of the test used to determine individual health status. In our knowledge, there is still no research conducted to study leprosy in immunity ratio, especially in mothers and children population. In this study, we would like analyze the correlation of hematological parameter with immunity

ration in maternal and pediatric leprosy cases in endemic areas.

## Materials and Methods

### *Study area and population*

This cross-sectional study was conducted from March until June 2020 in 10 sub-districts in Tuban Regency, East Java Province. This regency is considered a leprosy pocket area, with 172 cases in 2018 of which 5.81% cases were cases among children. These 10 areas across 10 sub-districts (Bulu, Jenu, Jetak, Kerek, Palang, Soko, Sumurgung, Tambakboyo, Temandang, Tuban) are considered endemic areas of leprosy, where in the last 5 years there are always new cases every year.

Subjects were selected from the local primary health center's registry data. The inclusion criteria for subject with leprosy was those with confirmed diagnosis of leprosy and aged between 5-18 years old for children; whilst the excluded were those with any leprosy reaction, poor general condition, and diagnosed with inflammatory or autoimmune disorder, allergy, or infection other than leprosy, and pregnancy. All of the subjects were given informed consent. Thereafter, to confirm the diagnosis, the subjects underwent clinical examination done by a dermatologist and then acid-fast staining by trained health and laboratory professional from Dr Soetomo General Hospital and Tropical Disease Centre of Airlangga University.

### **Data collection**

Blood sample was taken from the subjects and underwent complete blood count including haemoglobin (HB), red blood cells (RBC), white blood cells (WBC), platelets (PLT), haematocrit (HCT). The equipment used to collect data were tourniquet, 3 mL syringe, vacutainer tube, alcohol swab, and adhesive plaster. Samples were collected in EDTA tube for haematological parameter. Haematological parameter were measured using Sysmex XN haematology analyser.

Blood sample also used to measure levels of IFN- $\gamma$ , IL-4, IL-17, FOXP3+ in the blood circulation using the enzyme-linked immunosorbent assay (ELISA) method. For ELISA, blood was collected in sterile test tubes and centrifuged for 15 min at 50g. Serum was

separated and kept at -80°C until used for estimation of IFN-γ, IL-4, IL-17, FOXP3+, by the Human IFN-γ BioAssay ELISA kit, Human IL-4 R&D ELISA Kit, Human IL-17 Quantikine LSbio ELISA Kit and Human FOXP3+ BioAssay ELISA kit manufacture guideline, respectively.

**Data analysis**

Data were analyzed using SPSS® software (IBM Corp., Armonk, New York, USA). Variables were analyzed using correlation test to assess the association between hematological parameter and leprosy in each mother and child populations.

**Ethical considerations**

The study protocol has been approved by the Health

Research Committee of Dr Soetomo General Hospital, Surabaya (Ref. 1664/KEPK/XI/2019). Subjects were only included after written informed consent was obtained and they were reassured that non-participation would not affect their treatment.

**Results and Discussion**

Information was obtained from 33 pairs of maternal-pediatric leprosy cases in endemic areas. The data characteristics in pediatric leprosy group showed mean age of all children participants is 13.70 (SD ± 4.613) and mean age in maternal leprosy group is 42.64 (SD ± 8.721). The result of hematological complete test and correlation analysis are shown in Table 1.

**Table 1. Hematological complete test and correlation analysis results.**

Parameters	Mean ± SD		p value			
			Mothers		Children	
	Mothers	Children	Th1/Th2	Th17/Treg	Th1/Th2	Th17/Treg
Hemoglobin (Hb) (g/dl)	13.01 ± 1.24	13.23 ± 2.01	0.846	0.296	0.268	0.064
Red Blood Cells (RBC) (x 10 <sup>12</sup> /μl)	4.63 ± 0.51	4.98 ± 0.62	0.873	0.473	0.147	0.029
White Blood Cells (WBC) (x 10 <sup>9</sup> /μl)	8.32 ± 2.58	7.78 ± 2.01	0.871	0.778	0.104	0.521
Platelets (PLT) (x 10 <sup>9</sup> /μl)	313.88 ± 72.02	343.73 ± 88.65	0.758	0.614	0.596	0.083
Hematocrit (HCT) (%)	39.21 ± 3.75	39.72 ± 5.54	0.697	0.239	0.132	0.038

From the hematological results, all parameters showed normal value in all participants. The correlation analysis amongst maternal leprosy cases showed no significant result meanwhile significant results observed in RBC and HCT parameters with Th17/Treg ratio amongst pediatric leprosy cases. Th17 cells is one of the recently identified effector T cells and act as pro-inflammatory cells. Th17 cells has protective roles against leprosy due to antibacterial activity and produced inducible Nitric Oxide Synthase (iNOS) to kill *M. leprae* with the help

of reactive oxygen species.<sup>13</sup> Meanwhile, Treg cells has been known to keep the homeostatic between Th1/Th2 cells.<sup>13</sup> Treg cells regulates inflammation activity by inhibiting the activation of effector T cells such as Th17. Recent study shows Treg cells with transcription factor FOXP3+ in the nucleus involved in downregulation of immune response.<sup>17</sup>

The significant results in RBC (p value= 0.029) parameters in children population is in accordance

with previous study that stated the decrease in the RBC amongst leprosy patient could be caused by the high levels of proinflammatory cytokines such as IFN- $\gamma$  and TNF- $\alpha$ . These proinflammatory cytokines have the capability to inhibit erythropoiesis by inhibits erythropoietin receptors leads to proliferation inhibition of erythroid progenitors or induce nitric oxide production that lead to apoptosis of erythroid cell.<sup>18</sup> This findings also correlates with previous study stated that RBC has been known as reservoir of 10 pro-inflammatory cytokines such as, IL-17, IFN-  $\gamma$ , IL-1 and play roles in chemokine signaling and inflammation.<sup>19</sup>

The significant results observed in HCT ( $p$  value= 0.038) and Th17/Treg ratio in children population associated with previous study by Dani et al. that reported an increased in HCT after blood transfusion (RBC) in neonates followed by increased level of several cytokines, such as IL - 1 $\beta$ , IL - 8, IFN -  $\gamma$ , IL - 17, MCP - 1, IP - 10, dan ICAM - 1.<sup>20</sup> The insignificant results showed in mother population could be caused by the susceptibility of pediatric leprosy subjects in endemic areas to develop immune dysregulation since the beginning of life. Endemic areas are associated with poor living standard, nutrient deficiency, and poor environmental conditions.<sup>21</sup> In addition, cytokine level of child is affected by their mother cytokine level during pregnancy and breastfeeding time and environmental factors.<sup>22</sup>

The present study has limitation in terms of the type of study, the number of subjects within group, and the methods use for measurement of the parameters. Further studied need to be conducted to confirmed our findings and analyze other factors that correlates with immunity ration in leprosy cases.

### Conclusion

In conclusion, the results of this study showed the correlation of hematological parameters (RBC and HCT) with ) related to Th17/Treg ratio and could play roles in the incidence of dysregulation of immune system in children leprosy. No significant results observed in mothers population. Further studies need to be done to confirmed these findings.

**Acknowledgements:** I would like to thank to the

leprosy officers, doctors, and staff of Tuban District Health Office, East Java Province.

**Ethical Clearance:** The study protocol has been approved by the Health Research Committee of Dr Soetomo General Hospital, Surabaya (Ref. 1664/KEPK/XI/2019).

**Source of Funding:** Self-funding. The authors received no financial support for the research, authorship, and publication of this article.

**Conflict of Interest Statement:** Nil.

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