

# Bukti review jurnal : The spatial analysis of extrapulmonary tuberculosis spreading and its interactions with pulmonary tuberculosis in Samarinda , East Kalimantan, Indonesia

Penelitian ini telah diseminasikan pada seminar International Infection Diseases, Biothreats, and Military Medicine Latest Perspectives on Infectious Diseases including Biothreats and Military Medicine Surabaya, 27-28 August 2019 Organized by: Institute of Tropical Disease Universitas Airlangga.

**INSBIOMM**



**Infectious Diseases, Biothreats, and Military Medicine**  
Latest perspectives on infectious diseases, including  
biothreats and military medicine  
Surabaya, 27-28 August 2019

## PP016

### The spatial analysis of extrapulmonary tuberculosis spreading and its interactions with pulmonary tuberculosis in Samarinda, East Kalimantan, Indonesia

Nataniel Tandirogang<sup>1\*</sup>, Wirdah Ulfahaimi Mappalotteng<sup>2</sup>, Eko Nugroho<sup>3</sup>, Yadi Yasir<sup>1</sup>

<sup>1</sup>Laboratorium Mikrobiologi, Fakultas Kedokteran, Universitas Mulawarman, Samarinda; <sup>2</sup>Program Studi Pendidikan Dokter, Fakultas Kedokteran Universitas Mulawarman, Samarinda; <sup>3</sup>Laboratorium Patologi Anatomi, Fakultas Kedokteran, Universitas Mulawarman, Samarinda.

\*Presenting author

The image displays two screenshots of Gmail emails. The top screenshot is an email from 'INSBIOMM Conference' dated 20 Jul 2020 11:34. The subject is 'INSBIOMM Conference' and it is addressed to 'Inggris'. The email content states: 'Dear Nataniel Tandirogang, We would like to thank for your interest in joining INSBIOMM 2019 and sending us your full paper. With this email we also want to inform you that, your paper has been accepted as special issue in Infectious Disease Report (Q2 Scopus) Please kindly check this link: <https://www.cupress.org/journals/index.php/idi/issue/view/568> Regarding your paper acceptance, please find your invoice for article processing fee.' The bottom screenshot is an email from 'INSBIOMM Conference' dated 9 Jul 2020 11:48. The subject is 'Proofs INSBIOMM 2019' and it is addressed to 'Inggris'. The email content states: 'Dear Author, We glad to inform you that your paper in the Special issue of INSBIOMM has been published in the journal of Infectious Disease Reports. You can visit this link below to access your paper. <https://www.cupress.org/journals/index.php/idi/issue/view/568> Further information regarding the publication fee will be informed by our committee later. Thank you for your contribution in this issue. Best Regard, Scientific Committee' Both screenshots include contact information for the conference: 'International Conference on Infectious Diseases, Biothreats, and Military Medicine INSBIOMM 2019', 'Secretariate: Institute of Tropical Disease Kampus C Uniar, Jl. Mulyorejo, Surabaya 60115', 'Website: [www.id.uniar.ac.id/insbiomm](http://www.id.uniar.ac.id/insbiomm)', 'e-Mail: [insbiomm@id.uniar.ac.id](mailto:insbiomm@id.uniar.ac.id) [insbiomm@gmail.com](mailto:insbiomm@gmail.com)', 'Phone/WhatsApp: +6281325267661'.

Gmail interface showing an email from dr. Nataniel Tandirogang to NSBIOMM. The email content is as follows:

Phone/WhatsApp: +6281325267661

dr. Nataniel Tandirogang <natanie@idkaltim.org> kepada NSBIOMM  
9 Jul 2020 19:43

Dear  
**INSBIOMM Committee**  
we are very happy for the publication of this article, thanks to the committee insbiom, for the further the publication fee we are waiting for news  
Thanks a lot  
Best Regard,  
Nataniel Tandirogang  
\*\*\*

Pada tanggal Kam, 9 Jul 2020 pukul 11 48 INSBIOMM Conference <insbiomm@gmail.com> menulis:  
Dear Author,  
  
We glad to inform you that your paper in the Special issue of INSBIOMM has been published in the journal of Infectious Disease Reports.  
You can visit this link below to access your paper.  
<https://www.papress.org/journals/index.php/idr/issue/view/568>  
  
Further information regarding the publication fee will be informed by our committee later.  
  
Thank you for your contribution in this issue  
  
Best Regard,  
Scientific Committee

Gmail interface showing an email from dr. Nataniel Tandirogang to NSBIOMM. The email content is as follows:

dr. Nataniel Tandirogang <natanie@idkaltim.org> kepada NSBIOMM  
Kam, 2 Jul 2020 00:17

Dear Panitia INSBIOMM 2019,  
Berikut kami sampaikan file pdf proofreading highlighted (digarisbawah) yang sudah kami revisi terima kasih  
  
Best Regards,  
Nataniel Tandirogang  
\*\*\*

2 Lampiran • Dipindai dengan Gmail

8727\_Proof readi...  
8727\_Revised pro...

Gmail interface showing an email from INSBIOMM regarding the International conference on latest perspectives on Infectious Diseases, including Biotreats and Military Medicine. The email content is as follows:

INSBIOMM  
International conference on latest perspectives on Infectious Diseases, including Biotreats and Military Medicine  
August 27-28th, 2019, Surabaya, INDONESIA

**Letter of Abstract Acceptance**

Dear Presenter,

We are very pleased to inform you that your abstract entitled, "**The spatial analysis of extrapulmonary tuberculosis spreading and its interactions with pulmonary tuberculosis in Samarinda, East Kalimantan, Indonesia**" has been **accepted for Poster** presentation at International conference on latest perspectives on Infectious Diseases, including Biotreats and Military Medicine (INSBIOMM) scheduled on August 27-28, 2019 in Surabaya, Indonesia. The exact time and room of your presentation session will be specified on the INSBIOMM website: <http://id.unair.ac.id/insbiomm/> at the beginning of August, 2019.

Please note that individual requests for specific presentation dates and/or times cannot be addressed. Oral presentations can not exceed 10 min (including discussion). The details of oral presentation guideline is available on the conference website.

It is a condition of abstract acceptance that you or a nominated presenting co-author completes the registration and payment process before August 19th, 2019. Registration to attend the conference, please follow the link: <http://id.unair.ac.id/insbiomm/> Should the addressee above not be the nominated presenter, please inform us the name and email address of the presenter immediately to: [insbiomm@id.unair.ac.id](mailto:insbiomm@id.unair.ac.id) [insbiomm@gmail.com](mailto:insbiomm@gmail.com)

Again, congratulations on the acceptance of your abstract. If you are interest to publish your full paper to our proceeding or journal of "**The spatial analysis of extrapulmonary tuberculosis spreading and its interactions with pulmonary tuberculosis in Samarinda, East Kalimantan, Indonesia**" please submit your full paper to: [insbiomm@id.unair.ac.id](mailto:insbiomm@id.unair.ac.id) [insbiomm@gmail.com](mailto:insbiomm@gmail.com) On behalf of the Scientific Program Committee, we look forward to your full participation in the INSBIOMM 2019 in Surabaya.

Yours Sincerely,  
  
Prof. Soeliptjo, dr., MS., Ph.D.  
Chairman of the Organizing Committee  
Institute of Tropical Disease, Universitas Airlangga  
Kampus C UNAIR  
Jl. Mulyorejo, Surabaya  
Zip code: 60115

<p><b>The spatial analysis of extrapulmonary tuberculosis spreading and its interaction with pulmonary tuberculosis in Samarinda, East Kalimantan, Indonesia</b></p> <p><b>ABSTRACT</b> Background: Extrapulmonary TB (EPTB) is an infectious disease which affects more outside the lungs. EPTB patients cannot be spared of isolation, therefore the findings in the community indicate that there are still active pulmonary TB patients in various conditions. Understanding the distribution of EPTB can be used as an indicator to the uncontrolled source of TB transmission in the community. <b>Objective:</b> The aim of this study was to analyze EPTB using spatial analysis and correlation of EPTB with pulmonary TB in Samarinda. <b>Methods:</b> This study is an observational research with spatial analysis approach using ArcGIS 10.4 and ArcView 3.10.4 involving 48 samples of EPTB patients in Anatomical Pathology Laboratory (APL) Abadi Wahab Sijakana in 2017 and pulmonary TB patients who is spread of EPTB patients. The distribution of EPTB patients is mostly located in areas with high population density. <b>Results:</b> The results showed that the distribution pattern of EPTB patients was mostly in areas with high population density. Therefore, prevention and control should focus on areas with a concentration of EPTB patients. <b>Conclusion:</b> The distribution of patients with EPTB and pulmonary TB indicate there is an interaction between EPTB and pulmonary TB in the Samarinda. Statistical analysis shows the there is a positive correlation between EPTB and pulmonary TB with relative risk 29, outside of 1.1316, and correlation 0.402129 &gt; 1.117489452. <b>Keywords:</b> EPTB, TB, Point, spatial analysis.</p> <p><b>INTRODUCTION</b> Tuberculosis (TB) is an infectious disease caused by <i>Mycobacterium tuberculosis</i> (M. TB), that can infect lung (pulmonary TB) and other organs outside the lungs called extrapulmonary tuberculosis (EPTB). TB remains a global health problem, an estimated 8.3 million new TB cases in 2017 and 16% are EPTB cases. In recent decades, EPTB cases in developed countries have increased in proportion to the total TB cases<sup>1</sup>. Several studies have been carried out in various countries, found the highest percentage of EPTB in Brazil (45.6%), England and Wales (47%), Iran (27.3%), South India (27.3%), Korea (20.6%), and United States (14.7%), respectively<sup>1,2,3,4</sup>. Meanwhile in Indonesia, the number of EPTB cases nationally is</p>	<p>active, however it can be estimated that there are many EPTB cases in the community along with the increase in TB in the past 5 years, which is from 324,358 cases in 2014 to 511,873 in 2018<sup>5</sup>.</p> <p>Human can become infected with TB when inhaling M. TB from the droplet nuclei. When this substrate bacillus reaches the alveoli it will be digested by alveolar macrophages, so that most of them will be destroyed or inhibited and a few of them multiply immediately and are related with the macrophage cell. The spread of this bacillus through blood vessels or lymph vessels to organs outside the lungs, such as lymph nodes, genitourinary, pleura, bone and joint, meninges and the central nervous system and peritoneal organs are the most common EPTB manifested organs<sup>6</sup>. However, EPTB can also occur through reactivation of dormant bacilli or directly from adjacent organs that have been previously infected<sup>7</sup>. Therefore EPTB is less transmissible<sup>8,9,10,11</sup> than pulmonary so that the presence of EPTB patients in the community makes it possible to be an indicator of active TB as a source of transmission.</p> <p>Spatial analysis is one way to map the pattern of disease spread so that EPTB surveillance can be obtained. Spatial analysis is widely used in the health sector, which can help identify the distribution and clustering of disease cases, high-risk areas, and identify the risk factors that influence them, so that they can help efforts to control diseases<sup>12</sup>. In addition, it also helps in supporting decision making with short time and relatively little cost in terms of health resource management, epidemiological monitoring and disease control<sup>13</sup>.</p> <p>The aims of this study were to spatially analyze the spread of EPTB based on the location of the patient's residence and to determine the geographical relationship between EPTB patients and pulmonary TB patients.</p>	<p><b>MATERIALS and METHODS</b> This study is a cross-sectional study with a spatial analysis approach to describe the geographical distribution of EPTB patients in the population. The sample in this study were all patients with extra pulmonary TB who were diagnosed based on the results of <b>histopathological examination and PCR</b>. The degree of EPTB is defined by the pathologist based on the examination of the lymph nodes, liver, intestinal, genitourinary, bone and joint and places obtained from the patient Abadi Wahab Sijakana Hospital, Samarinda from January 2017 - December 2018. All patients were visited at their respective homes based on the address indicated on the medical record. The conditions of the patient's residence were carried out using GPS and direct interviews were conducted to find out the history of contact with patients with pulmonary TB around the patient's residence. All patients were in the city of Samarinda spread over 10 subdistricts. Data processing was performed using the QGIS Map Coordinate application version 4.5.0, ArcGIS software version 10.4 and SATSCAN software version 3.4.4.</p> <p><b>RESULTS and DISCUSSION</b> There are 49 EPTB patients based on the results of the Anatomical Pathology examination at the Anatomical Pathology Laboratory in Abadi Wahab Sijakana Hospital Samarinda. Only 44 people had the criteria and became the study sample. When conducting a field visit, based on the results of interviews, found 7 pulmonary TB patients who have been approved by the DOTS program. This patient was assumed to be approved by the Samarinda City Health Office. Of the 48 EPTB patients, there are 11% who have a history of pulmonary TB, and only 4.3% have a history of close contact with pulmonary TB patients.</p>
<p>General description</p>	<p>Spatial and Pattern Distribution of TBEP in Samarinda City</p>	<p>Pulmonary TB disease is transmitted through droplets with a source of infection, namely</p>

Gmail interface showing an email from dr. Nataniel Tandirogang to Kotak Masuk. The email content includes a greeting, a request for a revision, and a list of attachments including 'REVISI FINAL 220...'. The email is dated 22 Jan 2020 19:44.

Gmail interface showing a reply email from INSBIOMM Conference to the sender. The email content includes a greeting, a thank you message, and contact information for the International Conference on Infectious Diseases, Biothreats, and Military Medicine (INSBIOMM 2019). The email is dated 22 Jan 2020 21:00.

Gmail insbiomm@gmail.com Aktif

Tulis

Kotak Masuk 3.645

Berbintang

Ditunda

Terkirim

Draf 4

Selengkapnya

Label +

Notes

Unwanted

Licence to publish, Coi disclosure Kotak Masuk x 5 dari 17

**dr. Nataniel Tandirogang** <nataniel@idikalim.org>  
kepada INSBIO MM

Kam, 13 Feb 2020 14.01

Dear Scientific Committee INSBIO MM

Berikut kami emailkan Licence to publish dan Coi disclosure

Best regards  
Nataniel Tandirogang

3 Lampiran • Dipindai dengan Gmail

coi\_disclosure.pdf License Agreeeme... Microsoft Word - ...

INSBIO MM Conference <insbiomm@gmail.com>  
kepada saya

Jum, 14 Feb 2020 12.16

Inggris > Indonesia • Terjemahkan pesan

Nonaktifkan untuk: Inggris x

Gmail Telusuri dalam email Aktif

Tulis

Kotak Masuk 3.645

Berbintang

Ditunda

Terkirim

Draf 4

Selengkapnya

Label +

Notes

Unwanted

[10TH ISISM] EDITOR DECISION EKsternal Kotak Masuk x 1 dari 8

**PERMI Cabang Solo** <permicabangsolo@gmail.com>  
kepada saya

Sab, 28 Agu 2021 09.59

Inggris > Indonesia • Terjemahkan pesan

Nonaktifkan untuk: Inggris x

Dear, Author

With this notice we want to inform you that the editing of your submission is complete and already published in Proceedings of the 10th International Seminar and 12th Congress of Indonesian Society For Microbiology (ISISM 2019). You can check the Proceeding in the link below. Also please notice that indexation by World of Science (WoS), same as Scopus, takes 2-8 weeks

Submission URL: <https://www.atlantis-gress.com/proceedings/isism-19>

Best regards,  
10th International Seminar & 12th Congress of Indonesian Society For Microbiology (ISISM 2019) Committee  
Solo, 28th August 2021  
Contact person: +62 852-3677-7372 (Sutami)

Satu lampiran • Dipindai dengan Gmail

kuitansi 10th isis...