

THE EFFECT OF ROBUSTA COFFEE BP 42 EXTRACTION ON VASCULARIZATION AND COLLAGEN LEVELS IN SECOND-DEGREE BURN INJURY: AN EXPERIMENTAL STUDY

Ulfa Elfiah, Muhammad Fahmi Naufal
Medical Faculty, University of Jember

Abstract

The improper treatment of burn wounds can hinder the formation of new blood vessels and the proliferation of fibroblasts in producing collagen. Therefore, the use of modern dressings, such as topical gel-based preparations containing active ingredients to accelerate the wound entering the proliferation phase, is crucial. This study aims to demonstrate the effect of Robusta Coffee Extract BP 42 on the number of new blood vessels and collagen production in second-degree burn wounds.

Methods

This experimental study used 21 Long Evans rats as test subjects with a burn model. Second-degree burns were created by applying a 2x2.5 cm piece of hot metal to their backs. The rats were divided into three groups: a negative control group treated with a gel base, a positive control group treated with silver sulfadiazine, and a treatment group treated with a 2.5% Robusta Coffee Extract BP 42 gel. Collagen thickness assessment is carried out using a scoring system with a value range of 0-4. The data obtained were analysed using ANOVA to examine the effect of treatment on blood vessels and collagen thickness. Correlation analysis was used to investigate the relationship between the growth of new blood vessels and collagen production during the proliferation phase.

Result

The research results showed that there was an effect of increased collagen thickness on days 8 and 14 and an increase in the number of blood vessels on day 14 compared to the negative control group, with a p-value <0.05 after the application of the Robusta Coffee Extract BP 42 gel. The regression test results showed an influence of angiogenesis on collagen thickness on days 8 and 14, respectively, of 54.6% and 4.8%. These results demonstrate that the active ingredients in the Robusta Coffee Extract, which act as anti-inflammatory, antioxidant, and antibacterial agents, can enhance the regulation of Vascular Endothelial Growth Factor (VEGF). This key factor stimulates angiogenesis and increases the proliferation of fibroblasts in producing collagen. These results also show that the formation of new blood vessels and collagen production occur simultaneously when the wound enters the proliferation phase, thereby allowing the wound to heal quickly.

Conclusion

Administration of 2% Robusta 42 coffee extract gel can help the healing process of second-degree burns by providing effects in the form of increasing the number of blood vessels and collagen production which co-occur to accelerate the healing process of second-degree burns in Long Evans mice.

Reference

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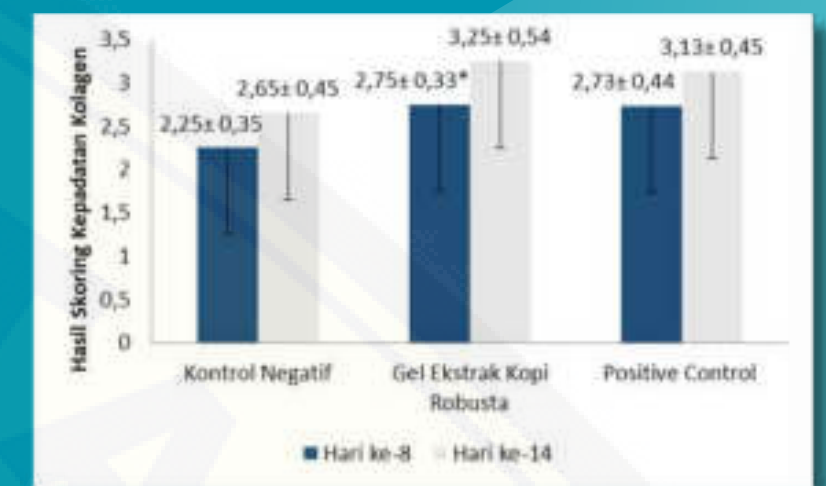


Figure 1. Results of collagen density scoring for each group (mean ± SD) on day 8 and day 14.



Figure 2. Histopathological description of collagen density on day 14; (a) negative control, (b) robusta coffee extract gel, (c) positive control

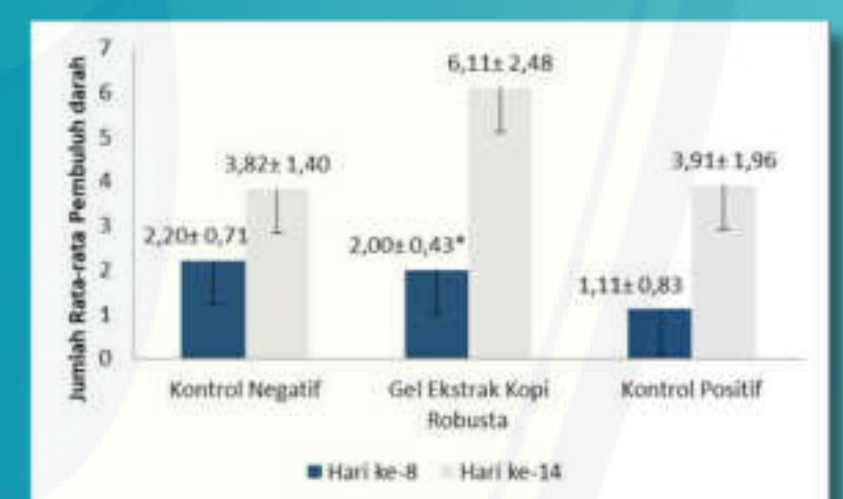


Figure 3. Number of Blood Vessels (mean ± SD) for each group on day 8 and day 14.



Figure 4. Histopathological description of blood vessels on day 14; (a) negative control, (b) positive control, (c) coffee gel extract

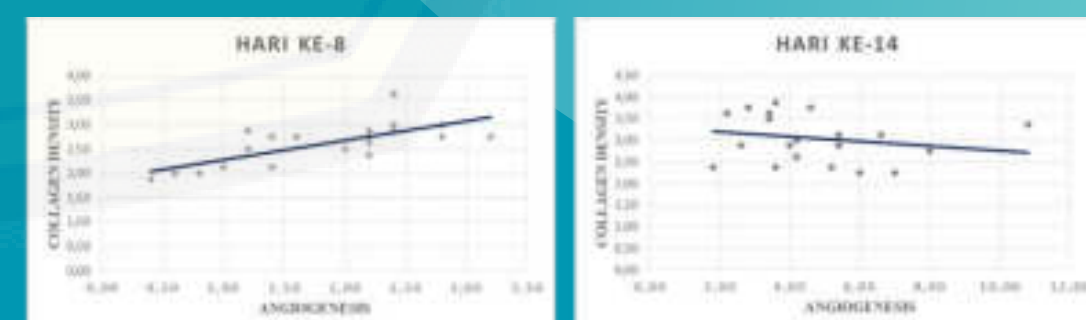


Figure 5. Relationship between angiogenesis and collagen density on day 8 and 14

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Abstract

The improper treatment of burn wounds can hinder the formation of new blood vessels and the proliferation of fibroblasts in producing collagen. Therefore, the use of modern dressings, such as topical gel-based preparations containing active ingredients to accelerate the wound entering the proliferation phase, is crucial. This study aims to demonstrate the effect of Robusta Coffee Extract BP 42 on the number of new blood vessels and collagen production in second-degree burn wounds. This experimental study used 21 Long Evans rats as test subjects with a burn model. Second-degree burns were created by applying a 2x2.5 cm piece of hot metal to their backs. The rats were divided into three groups: a negative control group treated with a gel base, a positive control group treated with silver sulfadiazine, and a treatment group treated with a 2.5% Robusta Coffee Extract BP 42 gel. The data obtained were analysed using ANOVA to examine the effect of treatment on blood vessels and collagen thickness. Correlation analysis was used to investigate the relationship between the growth of new blood vessels and collagen production during the proliferation phase. The research results showed that there was an effect of increased collagen thickness on days 8 and 14 and an increase in the number of blood vessels on day 14 compared to the negative control group, with a p-value <0.05 after the application of the Robusta Coffee Extract BP 42 gel. The regression test results showed an influence of angiogenesis on collagen thickness on days 8 and 14, respectively, of 54.6% and 4.8%. These results demonstrate that the active ingredients in the Robusta Coffee Extract, which act as anti-inflammatory, antioxidant, and antibacterial agents, can enhance the regulation of Vascular Endothelial Growth Factor (VEGF). This key factor stimulates angiogenesis and increases the proliferation of fibroblasts in producing collagen. These results also show that the formation of new blood vessels and collagen production occur simultaneously when the wound enters the proliferation phase, thereby allowing the wound to heal quickly.



The 12th Triennial Congress and
The 27th Annual Scientific Meeting of Indonesian Association
of Plastic Reconstructive and Aesthetic Surgeons (InaPRAS)
“Plastic Surgery Beyond Boundaries: Harmonizing Humanitarian
Approach, Global Collaboration and Innovation.”

August 28th - 30th, 2024
Alila Hotel, Solo, Central Java



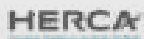
CALL FOR
ABSTRACT
Deadline: July 15th, 2024

Contact Person:

Alma : 08111 66 2664

Annisa : 08111 33 2664

Email : registrasiinapras2024@gmail.com





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Komunkos
RS Cipto Mangrovekara



Welcome Speech

Dear delegates,

Indonesian Association of Plastic, Reconstructive, and Aesthetic Surgeons (InaPRAS) once again invites you and your spouse and colleagues to participate in our 12th Congress and 27th Annual Meeting of the Indonesian Association of Plastic Reconstructive and Aesthetic Surgeons (InaPRAS). This time, the conference will be held in Solo with a theme of “Plastic Surgery Beyond Boundaries: Harmonizing Humanitarian Approach, Global Collaboration and Innovation”.

This event presents the latest information and technical updates on many aspects of Plastic Reconstructive and Aesthetic Surgery. Not only our plastic surgeon colleagues, we invite colleagues from other specialist who have the interest on particular topics; residents and students are also welcome to join.

We organize a 1 day extra-ordinary pre-congress workshops and courses proceeding the 2 day symposiums. Please mark your calendar on August 28th – 31st, 2024 to be with us in Alila Solo Hotel, Central Java. Enclosed, please find further information regarding this event and the packages being offered.

Please do not hesitate to get in touch with us.

Sincerely,

Dewi Haryanti Kurniasih, MD
Chairwoman





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Komnaskes
RS Gito Mangrove



Message from the Scientific Chairman

I am honored to extend a warm welcome to all delegates, distinguished speakers, and dignitaries assembled for the esteemed 12th Triennial Congress and the 27th Annual Scientific Meeting of the Indonesian Association of Plastic Reconstructive and Aesthetic Surgeons (InaPRAS).

This year's congress is themed "Plastic Surgery Beyond the Boundaries: Harmonizing Humanitarian Approach, Global Collaboration, and Innovation," signifying our dedication to surpassing conventional barriers, enhancing international partnerships, and spearheading innovations within the realm of plastic surgery.

As we gather in the historic city of Solo from the 28th to the 31st of August, 2024, at the Alila Solo Hotel, it is our collective aspiration to foster an environment conducive to scholarly exchange and professional fellowship. In concert, we shall delve into the forefront of our discipline, address the forthcoming challenges, and acknowledge the collective accomplishments that have culminated in this momentous occasion.

I reiterate my welcome to our event, marking the 12th Congress in conjunction with the 27th Annual Meeting of InaPRAS, which is going to provide you with one of the best chances for sharing and learning experiences. No less than Live Surgery of 5 different topics, 10 Workshops and Courses, 16 Video Parade, 3 Master Classes, 2 Teatime Talks, 22 Satellite Symposiums and 9 Plenary Lectures to add the high profile Moenadjat Memorial Lecture and Bisono Oration.

Sincerely,

Prof. Theddeus O.H. Prasetyono, M.D., Ph.D
Patron
Scientific Chairman



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Kemendiknas
RS Cipta Merguwinasa



General Information

THEME

“Plastic Surgery Beyond Boundaries: Harmonizing Humanitarian Approach, Global Collaboration and Innovation”.

ORGANIZER

Indonesian Association of Plastic, Reconstructive, and Aesthetic Surgeons, branch of Central Java.

PROGRAMME

Prime Program

- Moenadjat Memorial Lecture
- Bisono Oration.
- Plenary Lectures
- Live Surgeries
- Workshops and Courses
- Video Parade,
- Master Classes,
- Teatime Talks
- Satellite Symposia

Supporting Program

- Scientific Competitions: Golden Knife Award and Purple Lotus Award
- Sport Competitions: Golf, Tennis, Table Tennis and MiniSoccer
- PERAPI Bowl
- PERAPI Night
- Tour and Social Programs

VENUE

Alila Hotel Solo, Jl. Slamet Riyadi No.562, Jajar, Kec. Laweyan, Kota Solo, Jawa Tengah 57144, Indonesia



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Kemankes
RI Cipta Mangerukuma



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- Director of Moewardi Hospital
- KGPAA Mangkunegoro X

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- Teuku Adifitrian
- Siti Isya Wahdini
- Pujisriyani
- Indri Aulia
- Bayu Suhartadi
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- Herman Yosef L
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- Ahmad Fawzy
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- Caroline Fiona
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and Aesthetic Surgeons (InaPRAS)

**“Plastic Surgery Beyond Boundaries:
Harmonizing Humanitarian
Approach,
Global Collaboration
and Innovation.”**

**CALL FOR
ABSTRACT**

Deadline: July 15th, 2024

Important Dates

Tuesday, 27th of August 2024

InaPRAS Pre-Congress Program
PERAPI Cup (Tennis, Table Tennis, Minisoccer)
City Tour
Aesthetic Talkshow “Tampil Cantik dan Bugar”
Welcome Reception for Faculty

Wednesday, 28th of August 2024

PERAPI Bowl
PERAPI Cup (Tennis, Table Tennis, MiniSoccer)
Leshan
Paper Presentation
Alumni Gathering
Workshop Day (Live Surgery and Instructional Course)

Thursday, 29th of August 2024

Symposium Day 1
InaPRAS Congress (Muktamar)
Scientific Competition
Social Program
Presidential Dinner

Friday, 30th of August 2024

Symposium Day 2
Social Program
PERAPI Night
Master Class

Saturday, 31st of August 2024

Local Tour & Family Gathering



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Abstract Guidelines

Purple Lotus Award
(Teratai Ungu)

Golden Knife Award
(Pisau Emas)

1. IMPORTANT GUIDELINES

- There are two types of presentation: e-poster and oral (podium) presentation. Please select one of them. Please indicate your choice in the top corner of your abstract. Oral Presentation or E-Poster
- Committee will decide on the final presentation type (Oral Presentation or E-Poster)
- The abstracts should be within 300 words (maximum half A-4 size page) and the entire submission must fit on a single page
- Please Note: graphs/tables/image should not to be included in the abstract
- Abstract should be prepared in Microsoft Word Arial, 12 point with single line spacing, typeface, with the title in boldface
- It is the author's responsibility to submit a correct abstract. Any errors in spelling, grammar or scientific fact will be reproduced as typed by the author
- The abstract should have a short, specific title (containing no abbreviations) that indicates the nature of the investigation. Title should be boldface font. The title should not exceed 20 words in UPPER CASE only.

2. HOW TO NAME AND SEND THE ABSTRACT

- File name format for Oral Presentation: Presenter name-abstract name-Oral
- File name format E-Poster: Presenter name-abstract name e-poster
- For online submissions of abstract and for guidelines please log on to Home -> Abstract -> Submission for Abstract or direct Access to
- Or send via email with attached Microsoft word file to inapras2024@gmail.com, before the deadline in order to be sent for review and approval prior to its inclusion in the scientific program.
- Last date for submission of abstract is **July 15th, 2024**.
- Notification of acceptance of abstract submitted will be sent by e-mail at the latest by **July 31st, 2024**

3. ABSTRACT GUIDELINES (300 WORDS OR HALF PAGE OF A4 SIZE PAGE)

- Background/Rationale: Indicated the purpose and objective of the research, the hypothesis that was tested or a description of the problem being analyzed or evaluated.
- Methods: Describe the setting/location for the study, study design, study population, data collection and methods of analysis used.
- Result: Present as clearly and detailed as possible the findings/outcome of the study, with specific result in summarized form. Inclusion of gender breakdown of data is strongly encouraged.
- Findings or Conclusion: briefly discuss the data and main outcome of the study. Do not begin sentences with numerals. Standard abbreviations may used without definition.

4. INSTRUCTIONS FOR THE PRESENTER OF ORAL PRESENTATION

- When combining video films with PowerPoint for oral presentation, please note the following points;
- Please note that the conference computers in the session halls are being supplied with Windows 7 and Office 2013.
- Insert pictures as JPG files (and note TIF, PNG or PICT – these images will not be visible on a PowerPoint based PC)

5. INSTRUCTIONS FOR THE PREPARATION OF E-POSTER

- Suggestion at least 24 font size
- Please save the E-poster in high quality image with format .jpg or .jpeg with Portrait Position
- Resolution e-poster 1080pixel x 1920pixel with max. size 8 MB
- Pictures and graphics should be of good quality (high resolution)
- E-poster should not contain any video clips/animation files

**CALL FOR
ABSTRACT**

Deadline: July 15th 2024



The 12th Triennial Congress and The 27th Annual Scientific Meeting of Indonesian Association of Plastic Reconstructive and Aesthetic Surgeons (InaPRAS)

Aesthetic Talkshow

Tampil Cantik & Bugar



Affandi Wiramur
(Plastic Surgeon)
"Unboxing Aesthetic Surgery
for Everyone"



Arie Kusumawardani
(Dermato Venereologist)
"Cantik, Aman, dan Sehat"



Maharani Setiawan (Owner of Prasojo Lurik)
"Healthy Lifestyle as
Womenpreneur"

Registration Fee
IDR 25,000

August 27, 2024
09.00 - 12.00 a.m
at Alila Hotel

DIBUKA UNTUK UMUM
Terbatas untuk 100 orang peserta

Contact Person
Desta : 08111 66 2664
Annisa : 08111 33 2664
Email : inapras2024@gmail.com

Bank Mandiri Branch Semarang
PIT XXVII PERAPI : 135-00-0272024-9



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SECRETARIAT

Secretariat Plastic Surgery Division, Department of Plastic Surgery,
Universitas Sebelas Maret/Dr. Moewardi Hospital
Jl. Kolonel Sutarto No. 132, Solo,
Central Java 57126, Indonesia

Telp: +62274581333

Fax: +6227581333

Email : registrasiinapras2024@gmail.com

Contact Person:

Alma : 08111 66 2664

Annisa : 08111 33 2664





SURAT TUGAS

Nomor : 3634/UN25.1.10/KP/2024

Pimpinan Fakultas Kedokteran Universitas Jember menugaskan kepada :

Nama : Dr. dr. Ulfa Elfiah, M.Kes., Sp.BP-RE., Subsp.L.B.L.(K)
NIP : 197607192001122001
Pangkat : Pembina Tk. I / IV/b
Jabatan : Dekan / Lektor Kepala
Unit Kerja : Fakultas Kedokteran Universitas Jember

untuk mengikuti kegiatan *The 12th Triennial Congress and The 27th Annual Scientific Meeting of Indonesian Association of Plastic Reconstructive and Aesthetic Surgeons (InaPRAS)* dengan tema "*Plastic Surgery Beyond Boundaries: Harmonizing Humanitarian Approach, Global Collaboration and Innovation*" yang dilaksanakan pada tanggal 28-30 Agustus 2024 di Hotel Alila, Solo.

Demikian surat tugas ini diberikan untuk dapat dilaksanakan dengan sebaik-baiknya dan penuh rasa tanggung jawab..

Jember, 26 Agustus 2024

a.n Dekan
Wakil Dekan II,



dr. Heni Fatmawati, M.Kes., Sp.Rad., N.K.L.(K)
NIP.197602122005012001

CERTIFICATE



PROUDLY PRESENTED TO

Ulfa Elfiah

2nd WINNER OF E POSTER COMPETITION

The 12th Triennial Congress and The 27th Annual Scientific Meeting of Indonesian Association of Plastic Reconstructive and Aesthetic Surgeons (InaPRAS)

"Plastic Surgery Beyond Boundaries: Harmonizing Humanitarian Approach, Global Collaboration and Innovation."

August 28th - 30th, 2024 - Alila Hotel, Solo, Central Java, Indonesia

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