

## DAFTAR PUSTAKA

- Shah, J., Patel, S. & Singh, B.. *Head And Neck Surgery and Oncology*. Philadelphia: Elsevier. 2012
- Persky, M. & Manolidis, S. *Vascular Tumors of the Head and Neck*. In: *Bailey's Head & Neck Surgery-Otolaryngology*. Fifth Edition ed. Philadelphia: Lippincott Williams & Wilkins, p. 2023.
- Gleeson M. *Scott-Brown's Otorhinolaryngology: Head and neck surgery*. 7th Ed. CRC Press 2008;3:2437-44.
- Sharma BB, Sharma S, Sharma S, Bhardwaj N, Dewan S, Aziz MR. *Clinico-radiological evaluation of Juvenile Nasopharyngeal Angiofibromas: two case reports*. European Journal of Medical Case Reports. 2017 May 1;1:79-85.
- Panda NK, Gupta G, Sharma S, Gupta A. *Nasopharyngeal Angiofibroma-changing Trends in the Management*. Indian J Otolaryngol Head Neck Surg. 2012 Sep;64(3):233-9. doi: 10.1007/s12070-011-0338-z. Epub 2011 Nov 30. PMID: 23998026; PMCID: PMC3431533.
- Yusmawan, W. & Antono, D., 2019. Anatomi. In: Farhat, M. Adham, Y. A. Dewi & S. R. Indrasari, eds. *Karsinoma Nsofaring*. Jakarta: Penerbit Buku Kedokteran EGC, pp. 19-26.
- Weber AL, al-Arayedh S, Rashid A. *Nasopharynx: clinical, pathologic, and radiologic assessment*. Neuroimaging Clin N Am. 2003; 13:465–483
- Goh J, Lim K. *Imaging of nasopharyngeal carcinoma*. Ann Acad Med Singapore. 2009; 38:809–816
- Prescher, Andreas. *Surgical Anatomy of The Skull Base*. Springer International Publishing. Switzerland. 2017
- Evans, B. K., 2016. *Infratemporal and pterygopalatine fossae and temporomandibular joint*. In: S. Standring, ed. *Grays's Anatomy: The Anatomical Basis of Clinical Practice*. UK: Elsevier, p. 534.
- Macunso A, Hanafee W. *Head and Neck Radiology*. Philadelphia: Lippincott Williams & Wilkins; 2011.
- Mankowski, N. L. & Bordoni, B., 2021. *Anatomy, Head and Neck, Nasopharynx*. s.l.:StatPearls Publishing.
- Overdevest, J. B. et al., 2017. *Patterns of vascularization and surgical morbidity in juvenile nasopharyngeal angiofibroma: A case series, systematic review, and meta-analysis*. Head and Neck Wiley.
- R, Lazor J, Squires JH, Martinez F, Figueroa R. *Imaging and genomic features of juvenile angiofibroma*. Neurographics. 2011 Oct ):84-9.



- Mishra S, Praveena NM, Panigrahi RG, Gupta YM. *Imaging in the diagnosis of juvenile nasopharyngeal angiofibroma*. J Clin Imaging Sci. 2013 Mar 22;3(Suppl 1):1. doi: 10.4103/2156-7514.109469. PMID: 23878770; PMCID: PMC3716018.
- Hanna M, Batra PS, Pride GL. *Juvenile nasopharyngeal angiofibroma: review of imaging findings and endovascular preoperative embolization strategies*. Neurographics. 2014 Mar 1;4(1):20-32.
- Bahar, A., Silalahi, P. Y. & Prabowo, Y., 2022. *Identifying Feeding Artery During Preoperative Embolization of Juvenile Nasopharyngeal Angiofibroma*. GSC Advance Research and Reviews.
- Momeni AK, Roberts CC, Chew FS. *Imaging of chronic and exotic sinonasal disease*. American Journal of Roentgenology. 2007 Dec;189(6\_supplement):S35-45.
- Angela B, Kristen O, Bradford A; *Juvenile nasopharyngeal angiofibroma*. Otolaryngologic Clinics of North America. 2011;44(4):989-1004.
- Liu Z, Wang J, Wang H, et al. *Hormonal receptors and vascular endothelial growth factor in juvenile nasopharyngeal angiofibroma: immunohistochemical and tissue microarray analysis*. Acta Otolaryngol. 2015 Jan. 135 (1):51-7
- Mishra, S., Praveena, N. M., Panigrahi, R. G. & Gupta, Y. M., 2013. *Imaging in the Diagnosis of Juvenile Nasopharyngeal Angiofibroma*. Journal of Clinical Imaging Science.
- Nelson, B. L. & Phillips, B. J., 2018. *Benign Fibro-Osseous Lesions of the Head and Neck*. Head and Neck Pathology.
- Al-Ahmari, M. S. & Assiri, K. S., 2018. *Juvenile Nasopharyngeal Angiofibroma in a Woman: A rare case report*. The Egyptian Journal of Hospital Medicine, pp. 4572-4575.
- Robert J. et al. *Radiotherapy for juvenile nasopharyngeal angiofibroma*. Practical Radiation Oncology. 2011; 1: 271– 278.
- Mankowski, N. L. & Bordoni, B., 2021. *Anatomy, Head and Neck, Nasopharynx*. s.l.:StatPearls Publishing.
- Szymańska A, Szymański M, Czekajska-Chehab E, Szczerbo-Trojanowska M. *Invasive growth patterns of juvenile nasopharyngeal angiofibroma: radiological imaging and clinical implications*. Acta Radiologica. 2014 Jul;55(6):725-31.
- Garça1 MF, Yuca SA, Yuca K. *Juvenile nasopharyngeal angiofibroma*. Eur J Gen Med. 2010;7(4):419-25.
- Gandhi M, Sommerville J. *Radiological Diagnosis. Juvenile Angiofibroma*. Springer. 2017
- z DP, Orscheln ES, Koch BL. *Masses of the nose, nasal cavity, and pharynx in children*. RadioGraphics. 2017 Oct;37(6):1704-30.



- Wei Y, Xiao J, Zou L. *Masticator space: CT and MRI of secondary tumor spread*. American Journal of Roentgenology. 2007 Aug;189(2):488-97.
- Alimli AG, Ucar M, Oztunali C, Akkan K, Boyunaga O, Damar C, Derinkuyu B, Tokgöz N. *Juvenile nasopharyngeal angiofibroma: magnetic resonance imaging findings*. Journal of the Belgian Society of Radiology. 2016;100(1).
- El-Naggar AK, Chan JK, Grandis JR, Takata T, Slootweg PJ, editors. *WHO classification of head and neck tumours*. International Agency for Research on Cancer; 2017.
- McKnight CD, Parmar HA, Watcharotone K, Mukherji SK. *Reassessing the Anatomic Origin of the Juvenile Nasopharyngeal Angiofibroma*. J Comput Assist Tomogr. 2017 Jul/Aug. 41 (4):559-64. [Medline].
- Cruz AA, Atique JM, Melo-Filho FV, Elias Jr J. *Orbital involvement in juvenile nasopharyngeal angiofibroma: prevalence and treatment*. Ophthalmic Plastic & Reconstructive Surgery. 2004 Jul 1;20(4):296-300.
- Koeller KK. *Radiologic features of sinonasal tumors*. Head and neck pathology. 2016 Mar 1;10(1):1-2.
- Sitenga, G. et al., 2021. *The use of flutamide for the neoadjuvant treatment of juvenile nasopharyngeal angiofibroma: a review of the literature comparing results by pubertal status and tumor stage*. Int J Dermatol.
- Bryant C, Mendenhall W. *Radiation Therapy*. Juvenile Angiofibroma Ch. 18. Springer. 2017
- Tork, C. A. & Simpson, D. L., 2021. *Nasopharyngeal Angiofibroma*. StatPearls.
- Uetz, S. & Crosby, D. L., 2020. *Current Management of Juvenile Nasopharyngeal Angiofibroma*. Pediatric Dermatology and Allergy.
- Dai LB, Zhou SH, Ruan LX, Zheng ZJ. *Correlation of computed tomography with pathological features in angiomyomatous nasal polyps*. PloS one. 2012 Dec 31;7(12):e53306.
- Mohebbi S, Aghajanpour M. *From Juvenile Nasopharyngeal Angiofibroma to Nasopharyngeal Carcinoma; A Rare Case Report of Nasopharyngeal Mass*. Bulletin of Emergency & Trauma. 2019 Oct;7(4):424.
- Hodges JM, McDevitt AS, Ali AIE, Sebelik ME. *Juvenile nasopharyngeal angiofibroma: Current treatment modalities and future considerations*. Indian J Otolaryngol Head Neck Surg. 2010;62(3):236-47
- Ginting, H. K. & Supriana, N., 2018. *Angiofibroma Nasofaring Juvenil*. Journal of the Indonesian Radiation Oncology Society, Volume 9.
- Thakar A, Hota A, Pookamala S. *Nasopharyngeal angiofibroma*. Laryngoscope 2013;6(1):25-34.
- ' , Schreiber A, Villaret AB. *Juvenile angiofibroma: Evolution of management*. Internat J Pediatr. 2012;ID 412545:1-11.



- Al-Helo S, Al shammay H, et al. *Outcomes of Preoperative Embolization of Juvenile Nasopharyngeal Angiofibroma*. Indian Journal of Forensic Medicine & Toxicology. 2021.
- Romani R, Tuominen H, Hernesniemi J. *Reducing Intraoperative Bleeding of Juvenile Nasopharyngeal Angiofibroma*. WORLD NEUROSURGERY 74 [4/5]: 497-500. 2010
- Ahmed M, Akhter A, et al. *Per-Operative Bleeding in Juvenile Nasopharyngeal Angiofibroma after Pre-Operative Embolization Per-Operative Bleeding in Juvenile Nasopharyngeal Angiofibroma*. PJMHS Vol. 14, NO. 3. 2020
- Valavanis A, Baltsavias, G. *Embolization of Juvenile Angiofibroma. Juvenile Angiofibroma Ch.9*. Springer. 2017
- Carrillo J, Carrillo L, Ramirez-Ortega M. *Recurrence of Juvenile Angiofibroma and its Prevention*. Juvenile Angiofibroma Ch.20. Springer. 2017
- Suroyo I, Budianto T. *The role of diagnostic and interventional radiology in juvenile nasopharyngeal angiofibroma: A case report and literature review*. Radiol Case Rep. 2020 Apr 22;15(7):812-815. doi: 10.1016/j.radcr.2020.04.017. PMID: 32346460; PMCID: PMC7182694.
- Radkowski D, McGill T, Healy GB, Ohlms L, Jones DT. *Angiofibroma. Changes in staging and treatment*. Arch Otolaryngol Head Neck Surg. 1996 Feb;122(2):122-9. doi: 10.1001/archotol.1996.01890140012004. PMID: 8630204.
- Parikh V, Hennemeyer C. *Microspheres embolization of juvenile nasopharyngeal angiofibroma in an adult*. Int J Surg Case Rep. 2014;5(12):1203-6. doi: 10.1016/j.ijscr.2014.10.019. Epub 2014 Nov 18. PMID: 25437676; PMCID: PMC4276082.
- Perez-Ordoñez B, Thompson L. *Chapter 5 - Benign Neoplasms of the Nasal Cavity, Paranasal Sinuses, and Nasopharynx. Head and Neck Pathology*. Churchill Livingstone. 2006. Pages 124-154. ISBN 9780443069604. <https://doi.org/10.1016/B978-0-443-06960-4.50012-4>.
- Thapar T, Gupta RR, Jagtap PJ, Aiyer RG. *Juvenile Nasopharyngeal Angiofibroma: Correlating Histology, Surgical Approach and Blood Loss*. Clin Rhinol An Int J 2015;8(2):47-52
- Leong, S.C. A systematic review of surgical outcomes for advanced juvenile nasopharyngeal angiofibroma with intracranial involvement. The Larvngoscope. 2013. 123: 1125-1131. <://doi.org/10.1002/lary.23760>
- Iad R, Hussain A, Rehman F, Iqbal J, Khan M, Ullah G, Khan Z. *E OF SURGICAL APPROACHES INFLUENCING TUMOUR*



RECURRENCE IN NASOPHARYNGEAL ANGIOFIBROMA. J Ayub Med Coll Abbottabad. 2015 Apr-Jun;27(2):388-90. PMID: 26411124.

Adham M, et al. Surgical approach of juvenile nasopharyngeal angiofibroma. Oto Rhino Laryngologica Indonesiana. 2022

Pletcher J, Newton T, et al. Preoperative Embolization of Juvenile Angiofibromas of The Nasopharynx. Ann Otol 84. 1975

Dhingra, P. & Dhingra, S., 2018. *Disease of ear, Nose and Throat & Head and Neck Surgery*. 7th ed. India: RELX India Pvt. Ltd.

Giorgianni A, Molinaro S, Agosti E, Terrana AV, Vizzari FA, Arosio AD, Pietrobon G, Volpi L, Turri-Zanoni M, Craparo G, Piacentino F, Castelnovo P, Baruzzi FM, Bignami M. *Twenty Years of Experience in Juvenile Nasopharyngeal Angiofibroma (JNA) Preoperative Endovascular Embolization: An Effective Procedure with a Low Complications Rate*. J Clin Med. 2021 Aug 31;10(17):3926. doi: 10.3390/jcm10173926.



## Lampiran 1. Ethical Clearance



KEMENTERIAN PENDIDIKAN, KEBUDAYAAN, RISET DAN TEKNOLOGI  
UNIVERSITAS HASANUDDIN FAKULTAS KEDOKTERAN  
KOMITE ETIK PENELITIAN UNIVERSITAS HASANUDDIN  
RSPTN UNIVERSITAS HASANUDDIN  
RSUP Dr. WAHIDIN SUDIROHUSODO MAKASSAR  
Sekretariat : Lantai 2 Gedung Laboratorium Terpadu  
JL.PERINTIS KEMERDEKAAN KAMPUS TAMALANREA KM.10 MAKASSAR 90245.  
Contact Person: dr. Agussalim Bukhari.,MMed.PhD, SpGK TELP. 081241850858, 0411 5780103, Fax : 0411-581431



### REKOMENDASI PERSETUJUAN ETIK

Nomor : 130/UN4.6.4.5.31 / PP36/ 2024

Tanggal: 29 Februari 2024

Dengan ini Menyatakan bahwa Protokol dan Dokumen yang Berhubungan Dengan Protokol berikut ini telah mendapatkan Persetujuan Etik :

No Protokol	UH24010075	No Sponsor	
Peneliti Utama	<b>dr. Ivanlibrian Rubens Husandy</b>	Sponsor	
Judul Peneliti	EFIKASI TRANS-ARTERIAL EMBOLIZATION (TAE) PRE-OPERATIF DALAM MEMBATASI VOLUME PENDARAHAN INTRA-OPERATIF BERDASARKAN SURGICAL APPROACH DAN STAGING MENURUT KLASIFIKASI RADKOWSKI PADA ANGIOFIBROMA NASOFARINGS JUVENIL		
No Versi Protokol	<b>1</b>	Tanggal Versi	<b>6 Februari 2024</b>
No Versi PSP		Tanggal Versi	
Tempat Penelitian	RSUP dr. Wahidin Sudirohusodo Makassar		
Jenis Review	<input type="checkbox"/> Exempted <input checked="" type="checkbox"/> Expedited <input type="checkbox"/> Fullboard Tanggal	Masa Berlaku <b>29 Februari 2024</b> sampai <b>29 Februari 2025</b>	Frekuensi review lanjutan
Ketua KEP Universitas Hasanuddin	<b>Prof. dr. Muh Nasrum Massi,PhD,SpMK, Subsp Bakt(K)</b>		
Sekretaris KEP Universitas Hasanuddin	<b>dr. Firdaus Hamid, PhD, SpMK(K)</b>		

Kewajiban Peneliti Utama:

- Menyerahkan Amandemen Protokol untuk persetujuan sebelum di implementasikan
- Menyerahkan Laporan SAE ke Komisi Etik dalam 24 Jam dan dilengkapi dalam 7 hari dan Lapor SUSAR dalam 72 Jam setelah Peneliti Utama menerima laporan
- Menyerahkan Laporan Kemajuan (progress report) setiap 6 bulan untuk penelitian resiko tinggi dan setiap setahun untuk penelitian resiko rendah
- Menyerahkan laporan akhir setelah Penelitian berakhir
- Melaporkan penyimpangan dari protokol yang disetujui (protocol deviation / violation)
- Mematuhi semua peraturan yang ditentukan



## Lampiran 2. Tabel Uji Statistik

### Transpalatal Nonparametric Tests

Hypothesis Test Summary			
Null Hypothesis	Test	Sig. <sup>a,b</sup>	Decision
1 The distribution of BL_Transpalatal is the same across categories of TAE.	Independent-Samples Mann-Whitney U Test	.076 <sup>c</sup>	Retain the null hypothesis.

- a. The significance level is ,050.  
b. Asymptotic significance is displayed.  
c. Exact significance is displayed for this test.

### Blood Loss Transpalatal Across TAE

#### Independent-Samples Mann-Whitney U Test Summary

Total N	23
Mann-Whitney U	29.500
Wilcoxon W	165.500
Test Statistic	29.500
Standard Error	14.926
Standardized Test Statistic	-1.775
Asymptotic Sig.(2-sided test)	.076
Exact Sig.(2-sided test)	.076

### TAE

#### Case Processing Summary

TAE		Cases					
		Valid		Missing		Total	
		N	Percent	N	Percent	N	Percent
BL_Transpalatal	non TAE	7	70.0%	3	30.0%	10	100.0%
	TAE	16	51.6%	15	48.4%	31	100.0%



### Descriptives

			Statistic	Std. Error
BL_Transpalatal	non TAE	Mean	2571.43	765.853
		95% Confidence Interval for Mean	Lower Bound	697.45
			Upper Bound	4445.40
		5% Trimmed Mean		2573.81
		Median		2500.00
		Variance	4105714.286	
		Std. Deviation	2026.256	
		Minimum		100
		Maximum		5000
		Range		4900
		Interquartile Range		4600
		Skewness		.081 .794
		Kurtosis		-1.769 1.587
TAE	TAE	Mean	836.56	150.220
		95% Confidence Interval for Mean	Lower Bound	516.38
			Upper Bound	1156.75
		5% Trimmed Mean		821.18
		Median		575.00
		Variance	361055.729	
		Std. Deviation	600.879	
		Minimum		150
		Maximum		1800
		Range		1650
		Interquartile Range		1104
		Skewness		.388 .564
		Kurtosis		-1.589 1.091

### Tests of Normality

TAE	Statistic	Kolmogorov-Smirnov <sup>a</sup>		Shapiro-Wilk		
		df	Sig.	Statistic	df	Sig.
BL_Transpalatal	.170	7	.200*	.908	7	.382
	.240	16	.014	.865	16	.023

\*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction



## Rhinotomy Lateral Nonparametric Tests

**Hypothesis Test Summary**

Null Hypothesis	Test	Sig. <sup>a,b</sup>	Decision
1 The distribution of BL_RhinoL is the same across categories of TAE.	Independent-Samples Mann-Whitney U Test	.100 <sup>c</sup>	Retain the null hypothesis.

- a. The significance level is ,050.
- b. Asymptotic significance is displayed.
- c. Exact significance is displayed for this test.

## Blood Loss Rhinotomy Lateral Across TAE

**Independent-Samples Mann-Whitney U  
Test Summary**

Total N	18
Mann-Whitney U	8.500
Wilcoxon W	128.500
Test Statistic	8.500
Standard Error	8.345
Standardized Test Statistic	-1.678
Asymptotic Sig.(2-sided test)	.093
Exact Sig.(2-sided test)	.100

## Stage IIB

### Nonparametric Tests

**Hypothesis Test Summary**

Null Hypothesis	Test	Sig. <sup>a,b</sup>	Decision
1 The distribution of BL_IIB is the same across categories of TAE.	Independent-Samples Mann-Whitney U Test	.009 <sup>c</sup>	Reject the null hypothesis.

- a. The significance level is ,050.
- b. Asymptotic significance is displayed.
- c. Exact significance is displayed for this test.



## Blood Loss IIB Across TAE

### Independent-Samples Mann-Whitney U Test Summary

Total N	16
Mann-Whitney U	5.000
Wilcoxon W	71.000
Test Statistic	5.000
Standard Error	8.788
Standardized Test Statistic	-2.560
Asymptotic Sig.(2-sided test)	.010
Exact Sig.(2-sided test)	.009

## Stage IIIA

### Nonparametric Tests

#### Hypothesis Test Summary

	Null Hypothesis	Test	Sig. <sup>a,b</sup>	Decision
1	The distribution of BL_IIIA is the same across categories of TAE.	Independent-Samples Mann-Whitney U Test	.333 <sup>c</sup>	Retain the null hypothesis.

a. The significance level is ,050.

b. Asymptotic significance is displayed.

c. Exact significance is displayed for this test.

## Blood Loss IIIA Across TAE

### Independent-Samples Mann-Whitney U Test Summary

Total N	4
Mann-Whitney U	.000
Wilcoxon W	3.000
Test Statistic	.000
Standard Error	1.291
Standardized Test Statistic	-1.549
Asymptotic Sig.(2-sided test)	.121
Exact Sig.(2-sided test)	.333



## Across TAE

### Nonparametric Tests

Hypothesis Test Summary			
Null Hypothesis	Test	Sig. <sup>a,b</sup>	Decision
1 The distribution of Vol is the same across categories of TAE.	Independent-Samples Mann-Whitney U Test	.012 <sup>c</sup>	Reject the null hypothesis.

- a. The significance level is ,050.  
 b. Asymptotic significance is displayed.  
 c. Exact significance is displayed for this test.

## Blood Loss Volume Across TAE

### Independent-Samples Mann-Whitney U Test Summary

Total N	41
Mann-Whitney U	73.000
Wilcoxon W	569.000
Test Statistic	73.000
Standard Error	32.880
Standardized Test Statistic	-2.494
Asymptotic Sig.(2-sided test)	.013
Exact Sig.(2-sided test)	.012



### Lampiran 3. *Curriculum Vitae*

## ***CURRICULUM VITAE***

#### **A. Data Pribadi**

- Nama : dr. Ivanlibrian Rubens Husandy
- Tempat/Tgl Lahir : Palembang, 28 September 1983
- Alamat : Kompleks Sukarame Indah Blok C1 No. 17, Palembang, Sumatra Selatan
- Jenis Kelamin : Laki-laki
- Nomor Telepon : 081341752738
- Agama : Buddha
- Status : Sudah Menikah
- Nama Ayah/Ibu : Hendy Oetih Hasan / Evie Meriska
- Nama Istri : Sisca Steffanny
- Nama Anak I : Nathaniel Ezra Husandy
- Nama Anak II : Quinze Eleanor Husandy

#### **B. Riwayat Pendidikan**

- 1988-1990 : SD Baptis, Palembang
- 1990-1993 : Happy Hollow Elementary School, West Lafayette, Indiana, USA
- 1993-1994 : Burtsfield Elementary School, West Lafayette, Indiana, USA
- 1994-1995 : SD Baptis, Palembang
- 1995-1998 : SMP Xaverius Maria, Palembang
- 1998-2001 : SMU Xaverius 1, Palembang
- 2002-2004 : Jurong Junior College, Singapore
- 2004-2011 : Universitas Pelita Harapan, Karawaci, Tangerang

#### **C. Riwayat Pekerjaan**



2011-2019 Dokter Umum di Rumah Sakit Myria, Palembang

#### **D. Makalah pada Seminar/Konferensi Ilmiah Nasional**

*"A Rare Case of Tuberculous Tenosynovitis"*, dibawakan pada acara "11TH ANNUAL SCIENTIFIC MEETING INDONESIAN SOCIETY OF MUSCULOSKELETAL RADIOLOGY" Malang, 7-9 September 2023

