

Optimizing ENT Patients Management Guidelines During COVID-19 Pandemic

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Abstract—An ENT specialist have a higher risk transmission of contracting COVID-19 due to procedures in the nasal cavity, nasopharynx, oral cavity, and oropharynx. This risk of transmission does not only affect the ENT specialist caring for the patient, but all staff in the room has potential for infection. Clinical and organizational guidelines is necessary for reducing contact. Patient, staff, and personal safety should been given the highest priority with strategy to provide high quality care. Aim of our study was to review the available recommendations published by Perhimpunan Dokter Spesialis Telinga Hidung Tenggorok Bedah Kepala dan Leher (PERHATI-KL) Indonesia on May 2020 for first edition and July 2020 for second edition and evaluate the underlying literature. Clinical and organizational guidelines for the management of a ENT department during COVID-19 pandemic set the appropriate standard for personal protective equipment, management for ENT patients with the new normal adaptation, and modify the assessment room. During the COVID-19 pandemic, ENT departments were forced to re-schedule their activity giving priority to urgent procedures and non-COVID cases. There is a lack of evidence-based literature providing. It is of paramount importance to face the emergency in the most effective and efficient manner, retrieving resources from non-essential settings and, at the same time, providing care to high priority non-COVID-19 related diseases.

Keywords—ENT patient, COVID-19 pandemic, guidelines

I. INTRODUCTION

Pandemic *Corona Virus* 2019 (COVID-19) is a new disease whose characteristics are not widely understood by spreading in many countries and still being researched how to prevent and treat it. The course of COVID-19 will run quickly and is very easily transmitted through droplets or aerosol. These droplets can stay on the surface of object within 2-3 days [1].

The global COVID-19 death rate is 4,3%, mostly in the elderly group, and patients with comorbid diseases [2]. The latest data in Indonesia, the death rate due to the COVID-19 pandemic has reached 2,7% [3].

An ENT specialist have a higher risk transmission of contracting COVID-19 due to procedures in the nasal cavity,

nasopharynx, oral cavity, and oropharynx, including manipulation on external auditory canal which has the potential to arise Aerosol Generating Procedure (AGP) that are more difficult to prevent than droplets [4]. Based on data from Perhimpunan Dokter Spesialis Telinga Hidung Tenggorok Bedah Kepala dan Leher (PERHATI-KL) Indonesia on 8th January 2021, there ara 99 ENT specialist who have been confirmed as COVID-19 and 11 people have died due to COVID-19 [4].

This risk of transmission does not only affect the ENT specialist caring for the patient, but all staff in the room has potential for infection. Clinical and organizational guidelines is necessary for reducing contact. Patient, staff, and personal safety should been given the highest priority with strategy to provide high quality care [4]. Aim of our study was to review the available recommendations published by Perhimpunan Dokter Spesialis Telinga Hidung Tenggorok Bedah Kepala dan Leher (PERHATI-KL) Indonesia on May 2020 for first edition and July 2020 for second edition and evaluate the underlying literature. Clinical and organizational guidelines for the management of a ENT department during COVID-19 pandemic set the appropriate standard for personal protective equipment, management for ENT patients with the new normal adaptation, and modify the assessment room.

II. PERSONAL PROTECTIVE EQUIPMENT

Standard personal protective equipment (EPP) is required by ENT specialist, especially when carrying out examinations or procedural that cause aerosols [5].

PEE has several principles, namely that it must provide protection against specific hazards, as light as possible so that it will create a sense of comfort, flexible, reuse, no additional harm, not easily damaged, standardize, easy maintenance, and not restrict motion [5].

Type of EPP recommended by first guideline for examination at the clinic is Level 2 EPP. Level 3 EPP is used to perform examination on upper airway, in an emergency room, and all ENT procedural (Figure 1) [6].

POLIKLINIK (konsultasi)

1. TIDAK melakukan konsultasi ataupun tindakan di poliklinik apabila dokter: Berusia > 60 tahun, memiliki komorbiditas & Tidak tersedia APD sesuai dengan yang dianjurkan.
2. Memakai baju jaga & APD level 2, tidak menggunakan jas sneli/jas dokter dan perhiasan, jam tangan, dan mengikat rambut
3. Tidak melakukan pemeriksaan di daerah hidung, mulut, dan orofaring (bila tidak diperlukan). Bila diharuskan, gunakan APD level 3.
4. Bila didapatkan pasien suspek COVID-19; masker dan sarung tangan diganti kemudian melakukan cuci tangan kembali.

5. Name tag tidak memakai tali yang panjang.
6. Tidak melakukan kontak fisik dengan pasien.
7. Pada saat anamnesis dokter dan pasien berjarak 1-2 meter
8. Peralatan medis harus dibersihkan setiap selesai digunakan dengan menggunakan alkohol 70% atau direndam dalam cairan yang mengandung klorin.
9. Peralatan non medis harus dibersihkan setiap selesai dengan menggunakan alkohol 70% ataupun disinfektan lain.
10. Membawa baju ganti dan mengganti baju sebelum pulang ke rumah.

Alat Perlindungan Diri Level 2

- Penutup kepala
- Goggle
- Masker N95
- Sarung tangan
- Gaun dibagian dalam dan apron dibagian luar
- Penutup sepatu

INSTALASI GAWAT DARURAT

1. Mencuci tangan sesuai standar WHO sebelum dan setelah melayani pasien.
2. Memakai APD level 3.
3. Pada saat anamnesis dokter dan pasien berjarak 1-2 meter.
4. Peralatan medis harus dibersihkan setiap selesai digunakan dengan menggunakan alkohol 70% atau direndam dalam cairan yang mengandung klorin.

5. Peralatan non medis harus dibersihkan setiap selesai pemeriksaan dengan menggunakan alkohol 70%.
6. Membawa baju ganti dan mengganti baju sebelum pulang ke rumah.

Alat Perlindungan Diri Level 3

- Bagian dalam penutup kepala bagian luar pelindung wajah
- Goggle
- Masker N95
- Hazmat
- Bagian dalam sarung tangan pendek dan bagian luar sarung tangan panjang
- Bagian dalam penutup sepatu dan bagian luar sepatu boot

This differs from the recommendations for the use of PPE in the second edition of guideline. Patient examination at clinic, inpatient room, and an emergency room are using Level 2 PPE. Procedural for non COVID-19 patient is using level 2 EPP. Level 3 EPP is used for examination or procedural of COVID-19 patient, actions in the airway area, and patients with rapid result [4].

In addition to the N95 mask, the recommended mask type is the N100 mask. This mask has better protection when handling Covid-19 patient (Figure 2) [5,7].



Fig. 2. N100 mask [7].

Powered Air Purifying Respirator (PAPR) is respirator equipped with a mechanical filter for contamination of particulates or harmful gases. This device is equipped with HEPA filter, has the advantage of eliminating the inhalation resistance caused by negative pressure respirators such as the N95 mask (Figure 3) [4,7].



Fig. 3. Powered air purifying respirator [7].

There is a minimum recommended PEE standard for action in the ENT section as shown in Table 1 [4,8].

Fig. 1. Personal protective equipment [6].

TABLE I. MINIMAL PROCEDURAL PEE [4,8]

RT PCR result for COVID-19	Procedure	Upper Airway Mucosal Intervention	PEE
Positive	Anything	All	N95 or PAPR, head cap, goggle, face mask, double gloves, coverall suit, boot, shoe cover
Unknown	Anything	Yes	N95 or PAPR, head cap, goggle, face mask, double gloves, coverall suit, boot, shoe cover
Unknown	potential to arise Aerosol Generating Procedure (AGP)	No	N95 or PAPR, head cap, goggle, face mask, double gloves, coverall suit, boot, shoe cover
Unknown	No	No	N95 or PAPR, head cap, goggle, face mask, double gloves, coverall suit, boot, shoe cover
Negative	Anything	Yes	N95 or PAPR, head cap, goggle or face mask, double gloves, coverall suit, boot or shoe cover
Negative	Potential	No	N95 or PAPR, head cap, goggle or face mask, double gloves, coverall suit, boot or shoe cover
Unknown/ Negative	No	No	Surgery mask, goggle, gown, gloves, head cap

III. MANAGEMENT OF AN ENT PATIENT DURING COVID -19 PANDEMIC

In an effort to reduce the spread of COVID-19 in the community and prevent disease transmission to medical personnel activities in the ENT section are limited to reduce contact. 4,6

The focus of ENT service should be directed at emergency. Reducing or stopping elective care to provide adequate medical personnel for COVID-19 patient care. The first edition guideline contains an appeal to postpone coming to medical treatment ENT doctor, except for patient with criteria as shown in Table 2 [6].

TABLE II. DIAGNOSIS THAT CANNOT BE DELAYED FOR TREATMENT AT AN ENT DOCTOR [6]

Diagnosis
Abscess
Upper airway obstruction
Fracture of Maxillofacial and nasal
Epistaxis
Sudden deafness
Laryngeal trauma
Foreign body of ENT
Vertigo
Acute otitis media
Otitis Externa
Sinusitis with orbital abscess
Chronic otitis media with complication
Malignancy (progressive)

Many patients do not seek treatment due to this pandemic condition, screening for new babies becomes obstructed, examination of hearing loss due to noise is postponed, hearing loss in the elderly not handled, and wax cleaning was not carried out. As we know, target sound hearing 2030 is addressing 90% of the causes of possible hearing loss prevented. 9

Pre-screening should be considered at arrival, before admission to the clinic, as well as at baseline visit. Anamnesis is very important including confirming patient contact

exposure COVID-19, cough, shortness of breath, fever, chills, headaches, and loss sense of smell and taste (less than 14 days). Patients who fail screening should consider for more detailed screening or evaluated via telemedicine visits. There is a suspicious of COVID-19 infection at this time, should be considered for other tests or referred to the COVID-19 team for further management. Screening form as shown in Figure 4 [4,6].

FORMULIR SKRINING COVID-19*

Nama :

Tgl. Lahir / Umur : Jenis Kelamin : L / P

Pekerjaan :

Alamat :

No. Tlp. / HP :

Keluhan :

NO.	GEJALA	Ya	Tidak	Tidak Tahu
1.	Demam ≥38°C atau riwayat demam			
2.	Batuk / pilek / sakit tenggorokan / sesak nafas (ISPA)			
3.	Sakit kepala / lemah (malaise) / nyeri otot			
4.	Mual atau muntah / nyeri abdomen / diare			
5.	Gangguan penghidu (anosmia/hiposomia)			
5.	Gangguan pengecap (disgeusia)			

Tanggal Pertama timbul gejala :

NO.	FAKTOR RISIKO	Ya	Tidak	Tidak Tahu
1.	Riwayat perjalanan ke luar negeri dalam 14 hari Negara / kota : Tgl perjalanan : Tiba di Indonesia :			
2.	Riwayat perjalanan / tinggal ke area transmisi lokal di wilayah Indonesia dalam 14 hari Provinsi / Kota :			
3.	Kontak dengan kasus suspek / probable / konfirmasi COVID-19 dalam 14 hari Hubungan kontak : Tgl kontak pertama / terakhir :			
4.	Riwayat kontak dengan sekelompok (cluster) penularan COVID-19 (misalnya: pasar, pabrik, institusi, dsb.) Bila ada sebutkan :			

Kelemahan: Kasus Suspek: Gejala No. 1 atau 2 + Faktor Risiko No. 1 atau 2
(Gejala No. 1 atau 2 + faktor Risiko No. 3 [kasus konfirmasi])
Kontak erat: Tanpa gejala + Faktor Risiko No. 3 (kasus konfirmasi/probable)

Demikian pernyataan ini saya sampaikan dengan sebenar-benarnya. Saya menyadari pemberian informasi yang tidak sesuai dengan keadaan sebenarnya dapat dikenakan sanksi menurut Undang-undang yang berlaku.

Tanggal :

Pasien / Pendamping
Dokter

[.....]
[.....]

*menyesuaikan dengan kondisi wilayah masing-masing

Fig. 4. Screening form for COVID-19 [4,6]

The things that all medical personnel should do, are advised to do some scree for symptoms of COVID-19 and propagate regular temperature checks. All medical personnel perform physical restrictions and wear a surgical mask every time enter the environment work., and wear appropriate PPE during patient interactions. All medical personnel must adhere to recommended hand hygiene protocols, should keep workspace clean in accordance with each defined hospital protocol [4,6,10-12].

Consider taking anamnesis prior to the patient's visit by telephone, web portal, or telemedicine, in order to minimize the time patient spend in the clinic, consider telling the patient when to come to the hospital for self-isolate for as long as possible before the appointment and for rescheduling if the patient has complaints towards covid-19, limit patient companions, priority is given to those who are needed directly to support the patient [4,6,10-12].

All patients and their escorts, including children, must wear a mask cover the nose and mouth, and wear it all times. All patients and caregivers must keep the distance in the waiting room with a minimum distance of more than 1 meter. Space it on seat patient in the waiting room or cross each seat with the seat next to it. Establish a schedule of an appropriate number of patients per hour to allow for effectiveness visiting times, patient meetings, room cleaning, and doctors shift time. For clinics with small waiting rooms or difficulty keeping their distance, consider doing patient flow. For example, asking the patient to wait in the car and be called go straight to the examination room. Consider creating a special path for substitution in order to minimize contact between patients. Educate patients and families to do infection prevention. Patients who are over 60 years of age and/or have concomitant diseases as heart disease, diabetes, asthma, and others separated from other patients and be prioritized for examination. Washing hands according to the World Health Organization (WHO) procedure with soap and water or use an alcohol-based hand sanitizer before and after examination. Before and after examination and consultation, patient waited to the prescription outside the room [4,6,10-12].

IV. PATIENT EXAMINATION

ENT doctor should not made a consultation or any procedural if more than 60 years old, has comorbidities, and appropriate PEE not available. Do not wear snelli suit, jewelry, watches, or a long card hanger. When acquired patient with suspicious COVID-19; mask and gloves are changes, then do wash hand washing again. Do not make physical contact with such patients shaking hands, during the history taking the doctor and patient are 1-2 meters apart. Medical equipment should be cleaned after each use from one patient to another (such as a stethoscope, otoscope, nasal speculum, etc.) using 70% alcohol wipes or parts certain can be immersed in a liquid containing chlorine. Non-medical equipment (such as pens, desks, computers, etc.) must be clean using 70% alcohol or other disinfectant. Change clothes before returning home. When doing an examination it is better not to take anamnesis,

wait for it to finish examination, when performing an otoscopy examination, the mask is still wearing the mask. When examining the nasal area and nasal cavity, the mouth is cover with a mask (see Figure 5.) Avoid nasal, mouth, and oropharynx examinations if not necessary [4,6,13].



Fig. 5. Anterior rhinoscopy.

V. SURGERY GUIDELINE

Procedures are prioritized using the following categories [6,8,14]:

- Emergency: direct impact on life.
- Urgency: Potential for permanent damage or worsening of the clinical condition if the procedure or surgery not performed within a specified time (two weeks) or there is a potential for exacerbation of pain and/or any condition, chronic and/or acute ones resulting in patient requiring urgent/emergency care or hospitalization.
- Time-sensitive: Temporary weakness in working or doing activities daily significant but not causing permanent damage, hospitalize, or emergency care.
- Routine priority: Minor temporary interruptions at work or perform daily activities but do not cause permanent damage, take care hospitalization, or urgent emergency care.

The best place for surgery on a COVID-19 suspect or patient is in the negative pressure room. If it is not available, it can be done in a normal operating room (OR) closed during the

procedure. When using OR which is normally positive pressure, the positive pressure should be turned off. In principle, minimized the number of staff involved. Team who carry out the operation must be able to maximize safety and efficiency because of all people in the room and their tools are at risk of being exposed to aerosol contamination, by therefore PPE is required at least Level 3. If possible using PAPR. Powered Air Purifying Respirator is used if surgery is done by opening the area upper airway surgery such as laryngectomy, maxillectomy, open reduction Internal Fixation (ORIF), and long time surgery [6,8,15]

VI. TELEMEDICINE

Consider the use of telemedicine for patient who do not require physical examination or allow for medical management based on anamnesis, but not limited on the conditions below [6,8,13]:

- A susceptible/at risk patient with significant comorbidities
- Follow up in some cases in postoperative patients
- Follow up to evaluate the laboratory result
- Patient with chronic mild acute exacerbation of disease.
- Taking prescription drugs or setting drug doses.
- Pre-operative counseling.
- New patient who need consultation only.
- Patient with screening results are suspected of COVID-19 symptoms.
- Not urgent for consultation to the hospital.

VII. CONCLUSION

During the COVID-19 pandemic, ENT departments were forced to re-schedule their activity giving priority to urgent procedures and non-COVID cases.

REFERENCES

- [1] K. Syal, "COVID-19: Herd Immunity and Convalescent Plasma Transfer Therapy," *J. Med. Virol.*, 2020.
- [2] J. Yuan, M. Li, G. Lv, and Z.K. Lu, "Monitoring Transmissibility and Mortality of COVID-19 in Europe," *Int. J. Infect. Dis.*, vol. 95, pp. 311–315, 2020.
- [3] BNPB, BNPB, "Situasi Virus Corona," 2021, [Online] Retrieved from: <https://www.covid19.go.id/situasi-virus-corona>.
- [4] O. Safitry, *Penanganan Covid-19: Pengalaman RSUI*. Universitas Indonesia Publishing, 2020.
- [5] Direktorat Jenderal Pelayanan Kesehatan Kementerian Kesehatan Republik Indonesia, "Petunjuk Teknis Alat Pelindung Diri (APD) Dalam Menghadapi Wabah COVID-19," 2020.
- [6] J. Bashiruddin, "Buku Pedoman Tatalaksana Di Bidang THTKL Selama Pandemi Covid-19," 2020.
- [7] W.H. Organization, "Rational Use of Personal Protective Equipment for Coronavirus Disease (COVID-19) and Considerations during Severe Shortages: Interim Guidance, 6 April 2020," World Health Organization, 2020.
- [8] J.F. Ha, "The COVID-19 Pandemic, Personal Protective Equipment and Respirator: A Narrative Review," *Int. J. Clin. Pract.*, vol. 74, no. 10, p. e13578, 2020.
- [9] J.Q. Wong, N.J. Haw, J. Uy, and D.B. Bayani, "Reflections on the Use of the World Health Organization's (WHO) OneHealth Tool: Implications for Health Planning in Low and Middle Income Countries (LMICs)," *F1000Research*, vol. 7, 2018.
- [10] J.R. Tysome and M.F. Bhutta, "COVID-19: Protecting Our ENT Workforce," *Clin Otolaryngol*, vol. 45, no. 3, pp. 311–312, 2020.
- [11] N. Leboulanger, T. Sagardoy, M. Akkari, S. Ayari-Khalfallah, C. Celerier, P. Fayoux, R. Luscan, A.-L. Mansbach, E. Moreddu, and S. Pondaven, "COVID-19 and ENT Pediatric Otolaryngology during the COVID-19 Pandemic. Guidelines of the French Association of Pediatric Otorhinolaryngology (AFOP) and French Society of Otorhinolaryngology (SFORL)," *Eur. Ann. Otorhinolaryngol. Head Neck Dis.*, vol. 137, no. 3, pp. 177–181, 2020.
- [12] D. Lu, H. Wang, R. Yu, H. Yang, and Y. Zhao, "Integrated Infection Control Strategy to Minimize Nosocomial Infection of Coronavirus Disease 2019 among ENT Healthcare Workers," *J. Hosp. Infect.*, vol. 104, no. 4, p. 454, 2020.
- [13] G. Setzen, S. Anne, and E.G. Brown, "Guidance for Return to Practice for Otolaryngology-Head and Neck Surgery," *Am. Acad. Otolaryngol. Neck Surg.*, 2020.
- [14] Federation of Specialty Surgical Associations, "Clinical Guide to Surgical Prioritisation during the Coronavirus Pandemic," 2020.
- [15] Royal College of Surgeon, "Advancing Surgical Care. COVID-19 Toolkit," 2020.