



# PROCEEDINGS

## The 4<sup>th</sup> International Conference on Sustainable Innovation (ICoSI) 2020

Cutting Edge Innovations for Sustainable Development Goals

Universitas Muhammadiyah Yogyakarta (Indonesia)

October 13 - 14 2020

<https://icosi.umy.ac.id/>

## Focal Conferences



- ✔ (ICPU) The 2nd International Conference on Pharmaceutical Updates
- ✔ (ICOMS) The 6th International Conference on Management Sciences
- ✔ (ICLAS) The 9th International Conference on Law and Society
- ✔ (ICMHS) The 4th International Conference Medical and Health Sciences
- ✔ (ICAF) The 6th International Conference for Accounting and Finance
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- ✔ (ICONURS) The 2nd International Conference on Nursing
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- ✔ (IConARD) International Conference on Agribusiness and Rural Development
- ✔ (ISHERSS) The 2nd International Symposium on Social Humanities Education and Religious Sciences
- ✔ (ICONPO) The 10th International Conference on Public Organization
- ✔ (DREAM) The 5th Dental Research and Exhibition Meeting
- ✔ (ICHA) The 5th International Conference on Hospital Administration
- ✔ (ICOSA) The 3rd International Conference on Sustainable Agriculture





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## Preface by the Chairperson of the 4<sup>th</sup> ICoSI 2020



**Dr. Yeni Rosilawati, S.IP. S.E., MM.**

Assalamu'alaikum Wr. Wb.

All praise is due to Allah, the Almighty, on whom we depend for sustenance and guidance. Prayers and peace be upon our Prophet, Muhammad SAW, his family and all of his companions.

On behalf of the organizing committee, it is my pleasure and privilege to welcome the honourable guests, distinguished keynote & invited speakers, and all the participants.

With the main theme of “Cutting-Edge Innovations on Sustainable Development Goals (SDGs)”, the 4<sup>th</sup> International Conference on Sustainable Innovation (ICoSI) 2020 serves as a forum to facilitate scholars, policy makers, practitioners, and other interested parties at all levels from Indonesia and abroad to present their novel ideas, promote cutting-edge research, and to expand collaboration network. The conference has about 1373 participants participating from more than 8 countries 4 continents all over the world, making this conference a truly international conference in spirit.

This multidisciplinary conference was first held in 2012 and has undertaken various changes and adopted to the current technological trends of our education system. From having this conference with just 175 participants back in 2012 we have come a long way in making the conference a huge success with more than 1373 participants participating in this two-day conference.

Formerly, this conference consisted of only 9 (nine) focal conferences. This year, there are 14 focal conferences from various disciplines, namely: 1) The 2<sup>nd</sup> International Conference on Pharmaceutical Updates (ICPU), 2) The 6<sup>th</sup> International Conference on Management Sciences

(ICoMS), 3) The 9<sup>th</sup> International Conference on Law and Society (ICLAS), 4) The 4<sup>th</sup> International Conference Medical and Health Sciences (ICMHS), 5) The 6<sup>th</sup> International Conference for Accounting and Finance (ICAF), 6) The 2<sup>nd</sup> International Language and Education Conference (ILEC), 7) The 2<sup>nd</sup> International Conference on Nursing (ICONURS), 8) The International Conference on Information Technology, Advanced Mechanical and Electrical Engineering (ICITAMEE), 9) The 2<sup>nd</sup> International Conference of Agribusiness and Rural Development (IConARD), 10) The 10<sup>th</sup> International Conference on Public Organization (ICONPO), 11) The 2<sup>nd</sup> International Symposium on Social Humanities Education and Religious Sciences (ISHERSS), 12) The 5<sup>th</sup> Dental Research and Exhibition Meeting (DREAM), 13) The International Conference on Hospital Administration (ICHA), and 14) The 3<sup>rd</sup> International Conference on Sustainable Agriculture (ICoSA).

Accordingly, We are proud to announce that this year, the 4<sup>th</sup> ICoSI 2020 breaks the Museum Rekor-Dunia Indonesia (MURI) record as the Virtual Multidisciplinary Conference with the Largest Number of Area of Fields in Indonesia

In addition, this year, this conference holds special value since this is the first conference in the history of our university where the entire conference is taking place remotely on a digital platform through the use of advance technologies due to the Covid-19 Pandemic.

I would take this opportunity to express my highest respect to the Rector of Universitas Muhammadiyah Yogyakarta, Dr. Gunawan Budiyanto who gave approval and ensured the maximal support from all the faculty members of Universitas Muhammadiyah Yogyakarta (UMY) that made this event a big success. In addition, my appreciation goes to all the support teams who have provided their valuable support and advice from planning, designing and executing the program.

Let me conclude my speech by encouraging the delegates to participate with an increasing number in all the activities and discussions through the digital platforms for the next two days. I wish everyone a successful, safe, and fruitful conference.

Thank you!

Wassalamu'alaikum Wr. Wb.

Yogyakarta, Indonesia, 14 October 2020





## Welcoming Remarks by the Rector of Universitas Muhammadiyah Yogyakarta



**Assoc. Prof. Dr. Gunawan Budiyanto**

Innovation is the beginning of the development of technology, and technology is a development machine that is expected to provide benefits to humans and provide the smallest possible impact on environmental quality. In the concept of sustainable development, development must improve the quality of human life without causing ecological damage and maintain the carrying capacity of natural resources.

International Conference on Sustainable Innovation (ICoSI) is an international conference which is an annual conference held by the University of Muhammadiyah Yogyakarta (UMY), Indonesia. In 2020 this raises the issue of "Cutting-Edge Innovations on Sustainable Development Goals." Therefore, on behalf of all UMY academics, I would like to congratulate you on joining the conference, hoping that during the Covid-19 Pandemic, we can still provide suggestions and frameworks for achieving sustainable development goals.

# About The 4<sup>th</sup> International Conference on Sustainable Innovation (ICoSI) 2020

## *Cutting Edge Innovations for Sustainable Development Goals*

The 2030 Agenda for Sustainable Development is enacted by the United Nations as a shared blueprint for peace and prosperity for people and the planet, now and into the future. It consists of strategies to improve health and education, reduce inequality, and spur economic growth while also conserving natures by 2030.

This year, however, at the first one-third of its timeline, the SDG Reports shows that the outbreak of COVID-19 did hinder the achievement, or at least decelerate the progress of achieving the 17 goals. In fact, according to the report, “some number of people suffering from food insecurity was on the rise and dramatic levels of inequality persisted in all regions. Change was still not happening at the speed or scale required”, accordingly.

Therefore, in this event of pandemic, the quantity and quality of research, innovation, and more importantly multi-disciplinary collaboration are indispensable. Furthermore, there needs to be clear ends of those works. That is how those research are applicable and benefits directly to the society. That is how those research is incorporated as the drivers of policy making, and used practically in the society. Hence, the stakeholders especially the triple helix of higher education institution, government, and industry must be re-comprehended and supported to reach the common goal of the SGD.

International Conference on Sustainable Innovation (ICoSI) has been essentially attempting to strengthen this regard since its first establishment. One of the goals of ICoSI is to provide primarily a platform where scholars, practitioners, and government could grasp the development and trends of research. Hopefully, meeting these actors altogether would result in stronger collaboration, sophisticated and advantageous research, and brighter ideas for further research. Based on these reasoning, this year, the 4th ICoSI 2020 UMY is themed ‘Cutting-edge Innovations for Sustainable Development Goals’.

Improving from last year conference which brought nine focal conference, this year ICoSI 2020 UMY brings 14 disciplines, from social sciences, natural sciences, and humanities. ICoSI 2020 received as much as 1005 papers. The paper works submitted in ICoSI 2020 UMY will be published in Atlantis Proceedings, IOP Proceedings, National/International Journals, and ICoSI ISBN-indexed Proceedings.

Nevertheless, ICoSI believes that publication is only the beginning of research dissemination. The publications will enhance the chance of the research known by wider audience, and then used, applied, and incorporated at either system, institutional, or personal level of human lives.



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# TRACK ECONOMICS, LAW, EDUCATION, SOCIAL, AND HUMANITIES



# Case Report: Misdiagnosis Case Of Nasopharyngeal Carcinoma in Patient with Chronic Rhinosinusitis: Family Doctors Awareness is Essential

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## ABSTRACT

Nasopharyngeal carcinoma (NPC) is the most common head and neck malignancy in Indonesia. It's commonly misdiagnosed in the early stages, because of nonspecific signs and symptoms as well as a difficult anatomic site to examine. Inflammation and infection in the upper respiratory airway such as chronic rhinosinusitis will obscure the cancer. NPC misdiagnosed will result in a high morbidity and mortality rate due to it being diagnosed in a later advanced stage. A 58 year old male with history of nasal blockage and nasal bleeding, accompanied by hearing problem and ear fullness. He also complained of a severe headache as well as the appearance of a left neck mass since a few months prior. The patient has been repeatedly seek medical assistance in primer health care due to nasal blockage. During nasopharyngoscopy a gelatinous mass in the right nasal cavity and a nasopharyngeal mass extending to both nasal cavities was found. The biopsy results were polyp nasi Hellquist Type I and Undifferentiated Nonkeratinizing Carcinoma. CT with contrast showed the nasopharyngeal mass has extended intracranially. Patient was diagnosed as chronic rhinosinusitis with nasal polyp and nasopharyngeal carcinoma stage IVA. Our patient initially had nasal obstruction but was not detected as an early diagnosis of nasopharyngeal cancer. Until a few months later, neck symptoms appeared so that the patient was referred with a suspicion of advanced NPC. More than 80% of NPC's therapeutic success occurs in the early stages with five-year survival rate around 72%. Its sign and symptom can mimic as an inflammation of upper respiratory airways. Therefore it is important for Family doctors or general practitioners in primary health care to detect in early stage then manage it properly. So periodic refreshing to diagnose the disease must be done continuously.

**Keywords:** nasopharyngeal carcinoma, nasal polyp, misdiagnosis, family doctors

## 1. INTRODUCTION

Nasopharyngeal carcinoma (NPC) arises in the epithelial lining of the nasopharynx. This neoplasm is frequently seen at the pharyngeal recess (Rosenmuller's fossa) posteromedial to the medial crura of the eustachian tube opening in the nasopharynx.<sup>1</sup> The nasopharyngeal malignancy is the most common malignancy of head and neck in Indonesia, the fourth most common cancer after ovarium, breast and skin cancer. The incidence rate of NPC in Indonesia is 6.2 per 100,000 population or 12,000 new cases every year.<sup>2</sup> Early detection of NPC is difficult, but early diagnosis is important to achieve optimum results of treatment. The difficulty of early NPC diagnosis is caused by unspecified early symptoms such ear and nose complaints (epistaxis, nasal obstruction and nasal discharge).<sup>3</sup> Chronic rhinosinusitis (with or without nasal polyps) in adults is defined as: presence of two or more symptoms, one of which should be either nasal blockage / obstruction /congestion or nasal discharge (anterior / posterior nasal drip): ± facial pain/pressure; reduction or

loss of smell; for ≥12 weeks.<sup>4</sup> One study in Indonesia indicated that the knowledge of General Practitioners (GPs) or Family Doctors is insufficient with many not being aware of the high incidence of NPC in their region.<sup>5</sup> Inflammation or infection in the upper respiratory airway such as chronic rhinosinusitis will obscure the cancer. NPC misdiagnosed will result in a high morbidity and mortality rate due to it being diagnosed in a later advanced stage/

## 2. CASE REPORT

A 58 year old male with history of nasal blockage and nasal bleeding, accompanied by hearing problem and ear fullness. He also complained of a severe headache as well as the appearance of a left neck mass since a few months prior. The patient has been repeatedly seek medical assistance in primer health care due to nasal blockage. A history of recurring nosebleeds since the previous 6 months was reported. During nasopharyngoscopy a gelatinous mass in the right nasal cavity and a nasopharyngeal mass extending to both nasal cavities was found. The biopsy



results were polyp nasi Hellquist Type I and Undifferentiated Nonkeratinizing Carcinoma. CT with contrast showed the nasopharyngeal mass has extended intracranially. Patient was diagnosed as chronic rhinosinusitis with nasal polyp and nasopharyngeal carcinoma stage IVA.



Fig. 1. Mass at Level III (Upper Jugular) of Left Neck Region



Fig. 2. Polyp in Right Nasal Cavity (red arrow) and Nasopharyngeal Mass (black arrow)

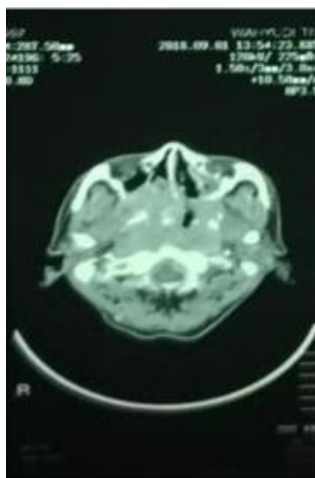


Fig. 3. Thickening of both nasopharyngeal posterior wall extending to right the nasal cavities



Fig. 4. Superiorly infiltrating intracranially through the cavernous sinus.

### 3. DISCUSSION

This report is about 58 year old male patient with nasal disorder and late diagnosis of nasopharyngeal carcinoma. He was referred with a neck lump, which months earlier started with a nasal congestion also ear problems and was treated as chronic inflammation of the nose. Even after the appearance of a nosebleed accompanied by headache, the patient had not been referred to the hospital until a neck lump appeared. At the hospital, a nasoendoscopy evaluation was carried out with a CT scan examination and confirmation of the diagnosis by biopsy.

1 disorder is common initial complaint of NPC, reaching 71.1 as reported by Rahman, et al<sup>7</sup> then 69,7% as reported by Abdullah, et al<sup>8</sup> or 54,4% based on the report of Adham, et al.<sup>2</sup> Nasal disorder is not a specific for nasopharyngeal symptom even though it is a common complaint in early stage of NPC and therefore, diagnosis for NPC is often late. Nasal disorder in NPC is usually related, with nasal congestion and blood secretion. The nasal symptom may be diagnosed as another common nasal disease or to be caused by upper tract respiratory infection.<sup>2</sup> Patient chronic rhinosinusitis with nasal polyp will have nasal obstruction for 92%<sup>4</sup> and also a nosebleed.

The desire of patients to overcome their nasal complaint is high. This can be seen from the high number of patients who visit a family doctor (FD) after suffering nasal symptoms and in this case from the history of previous multiple visits to GP or FD who did not manage to improve the patient's symptoms. The doctors did not consider nasal symptoms as an early indication of NPC, but considered rhinology disorder as the cause. Chronic inflammatory conditions accompanied by nose bleeds and headaches as part of polyp symptoms made health workers not think about other possible diseases for months until a neck lump appeared. As well as the ability of physical examinations such as posterior rhinoscopy is still not routinely performed by GP or FD when dealing with chronic nasal disorders patients who are difficult to recover. However, this is very reasonable because it turn out that the patients suffering from chronic rhinosinusitis with nasal polyp and in primary health facilities there are no special tools (nasoendoscopic examination) to examine the

nasopharynx, as it's hidden anatomy area in the back of the nasal cavity.

The family doctor as medical practitioners were not able to diagnose an early case of NPC. These practitioners were not aware of NPC as differential diagnosis leading to misdiagnosis. This may be due to the difficulty of nasopharyngeal examination and the fact that NPC has unspecific symptoms.<sup>9</sup> Some studies state that there are two factors as the cause of misdiagnosis of NPC, which are patient factors (patient delay) and health system factors (professional delay). Improper diagnosis, lack of suspicion of NPC by professional health practitioners play a very important role in late diagnosis.<sup>10</sup> NPC is a rare malignancy in most parts of the world and it is one of the most confusing, commonly misdiagnosed and poorly understood diseases.

The prognosis of patients with NPC depends on the clinical stage when the diagnosis is made. More than 80% of therapeutic success occurs in the early stages (I-II) and the success rate is reduced by 40% if the patient is found at an advanced stage (III-IV)<sup>11</sup>. Five-year survival rate at stage I, II, III, and IV obtained around 72%, 64%, 62%, and 38%<sup>12</sup>.

#### 4. CONCLUSION

In conclusion, early diagnosis of NPC is essential for the prognosis. NPC has unspecific early symptoms, such as nasal complaint. Therefore, medical practitioners such as family doctors in primary health care centre must improve their diagnostic capabilities (good history taking and anterior/posterior rhinoscopy examination) especially in differential diagnosis and to consider the possibility of NPC. Patients and their families should also be aware of these complaints, especially in regions with high incidence of NPC. Annual world head and neck cancer day at 27th July, is a good momentum to campaign NPC awareness all over the world.

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