Strategies for Oral Health Management in Patients with Acute Confusional State

Ratna Kumala Indrastiti¹, Yuniardini Septorini Wimardhani²,³,⁴*

¹ Oral Medicine Residency Program, Faculty of Dentistry, Universitas Indonesia, Jakarta 10430, Indonesia
² Department of Oral Medicine, Faculty of Dentistry, Universitas Indonesia, Jakarta 10430, Indonesia
³ Cluster of Clinical and Epidemiology and Clinical Studies in Dentistry, Faculty of Dentistry, Universitas Indonesia, Jakarta 10430, Indonesia
⁴ Center of Ageing Studies, Universitas Indonesia, Jakarta 10430, Indonesia

*E-mail: yuniardini@ui.ac.id

Abstract

Background: The presence of serious illnesses, medical complication, or drug intoxication may be the pathophysiological causes of acute confusional states (ACS). The oral diseases are highly prevalent in patients with this condition, which may cause life-threatening complications. Objectives: To describe the strategies for oral health management in patients with ACS who were treated in the inpatient ward of the Cipto Mangunkusumo Hospital.

Case Report and Management: This report presented two patients with the diagnosis of ACS with differential diagnosis of dementia. The first patient was 67-year-old female with a history of nausea and vomiting before admission, eating difficulty, systemic disease and drugs use were unremarkable. The second patient was a 60-year-old female with history of nausea and vomiting every food or drinking intake, diabetes mellitus and hypertension. Clinical intraoral examination of both patients revealed poor oral health and progressive oral functional loss; However, in-office and invasive dental treatment was not indicated. The treatment focus was to improve oral comfort, oral pain management, and infection control.

Conclusion: An appropriate oral healthcare plan should be considered depending on the patient’s dying stage or general condition with the collaboration between related healthcare providers.

Keywords: acute confusional state, dental problems management, oral hygiene, oral healthcare plan, serious illness

Background

The increasing elderly population worldwide would face dentists to a greater number of treatment to the older adults. The literature has shown that many oral diseases and conditions are prevalent in the older adults. The management of patients in this age group would be challenging since they have deteriorating physical and/or cognitive functions, financial condition and access to oral health care. There is high number of elderly who are not interested and/or not capable to receive routine dental care, which may result in the more complicated situation causing extensive oral disease and risking their general health condition. In order to provide good oral health care for this population, there is need to understand the age-related diseases and -conditions as well as the – disabilities.

The functional definition of the elderly has been developed by Ettinger and Beck. They defined elderly based on the physical ability to seek dental service, which are functionally independent older adult, frail adult and functionally dependent older adult. Although the majority of the elderly are categorized into independent older adults who are able to make dental visit, there are approximately 19% of elderly who are frail. They are having chronic conditions that make limitation in their mobility or categorized as community-dwelling elderly.

Many reports have agreed that the dental care is important for frail older adults since many oral diseases are becoming more complex over time, oral problems could affect quality of life and importantly, dental diseases have significant contribution to general health. Many elders presented with high rates of tooth loss, dental caries, poor oral hygiene, periodontal disease and oral mucosal lesions. Recently, the oral problems have been reported that it has possible association with diabetes, cardiovascular disease and lung disease. In the older adults, the systemic diseases and the related medication of could complicate their management. The elderly
sometimes is prescribed with a variety of medications which could have adverse side effects to the oral mucosa.

The dental treatment needs of the elderly are different to other age groups. It must consider the presence of the functional and cognitive changes, the medical condition, as well as the medication intake. The older adults with more complex condition would have different oral health condition to the healthy ones. Previous study showed that dementia, congestive heart failure and cancers were the most common medical condition found in the hospitalized older adults. The cognitive dysfunction affects the capacity of individuals to complete daily activities, but also basic activities. The global cognitive dysfunction and inattention were the main features of acute confusional state (ACS). The older adults with ACS usually accompanied by the presence of serious illness.

The oral health deterioration is more visible in older adults who are having terminal diseases or advanced organ failure which cause remarkable functional decline. This condition could limit their ability to perform basic oral self-care as well as gaining dental care that eventually resulted in increasing risks poor oral hygiene, dental caries, oral infections and oral pain. These oral conditions could put the frail older adults to increased risk of aspiration pneumonia, disturbing homeostatic, causing life threatening complication and substantially affect quality of life. Based on those reasons, it is important to considered oral health in the treatment plan of frail older adults, therefore improving the quality of life even in the end phase of life.

The recommended treatment for terminally ill patients is palliative care. Previous study showed that 40% of remained teeth in patients with terminal illness were carious or retained roots. Almost 60% of patients who were hospitalized at the end of life did not receive any dental treatment before death. It is sometimes difficult to perform the treatment, since there is a tendency of prolonged functional decline at this stage of life. The evidence-based dentistry on the decision on the timing and the type of palliative care are still limited. The management of oral health problems on those patients must be distinguished depends on the stage of illness with the intention of increasing comfort and pain reduction.

The patients sometimes do not receive an appropriate oral health treatment for some reasons. One of the reason is the lack of ability to communicate their oral health problems to the nurse or caregivers. The other is the lack skills of physician, nurse and other health care providers and involvement of dental professionals are limited. It is important to set the focus of treatment to prevent further complications and achieve quality of care by developing “a stage-appropriate oral healthcare plan” based on the multidisciplinary collaboration between physicians, dentists and all related health care providers. This model aimed to promote comfort, maintain oral function, and improve quality of life as proposed by Chen et al in 2015. This model focuses on daily oral hygiene practice, prevention and oral comfort care. The plan promotes bedside oral health care and symptoms management as well as improves the collaborative work between physicians, nurses and dentists.

**Objectives**

To describe the strategies for oral health management in patients with ACS who were treated in the inpatient ward of the Cipto Mangunkusumo Hospital using “a stage appropriate oral healthcare plan”.

**Case Report and Management**

**Case 1**

A 60-year-old female patient from the inpatient ward of the Cipto Mangunkusumo Hospital with a diagnosis of ACS was referred for oral diagnosis and management. The patient presented with a semi-conscious state (the Glasgow Coma Scale of 12), just awake from sleep and could not clearly answer the questions. The past medical history was gained from the medical record since there was no family or caregivers presented. The patient was unconscious on admission and only gained consciousness about 2 days before examination. The patient was weak with nauseous and vomiting every food and drinking intake prior hospital admission. The medical condition of the patient was very complex which included a 10 years’ diabetes mellitus, peptic ulcer, hyperalbuminemia, ischaemia anterolateral, hypermagnesia, hyperkalemia, hypertension, anemia and sepsis. The patient also on polypharmacy condition, receiving many medication for her condition including anti diabetic, antiemetic and prokinetic agent, several antibiotics, anticoagulant agent, antimucolytic agent, analgetic, antipyretic, antihyperuricemia agent, anti cholesterolemia agent, Kalium supplement and antacids. From the laboratory examinations showed decreasing levels of haematocrit, basophil, lymphocyte with increasing level of white blood cells, aspartate aminotransferase, fasting blood sugar, keton, ureum, and fibrinogen. Intraoral examination revealed ulcer on posterior buccal mucosa adjacent to the sharp surface of #17, cheilosis, chronic gingivitis, multiple radices on teeth #17,25,26,27,35,44,46; deep caries on #18,32,45. Overall, she was functionally disabled and unable to communicate her oral health needs.

The patient could not receive regular dental service, however she received regular care from the medical and nursing professionals. Therefore, the treatment for this patient should focus on the collaboration between the involved health care professionals as bedside management. Invasive procedures were avoided. The treatment goals for this patient were improving comfort, managing oral pain and infection control. Good communication, information, and education related to the patient’s condition were given to the nurse in the inpatient ward. The information regarding the importance of keeping patient’s oral hygiene, and emphasize on the effect of bad oral health condition to patient’s general health were also given. The nurse was asked to facilitate patient’s tooth brushing twice a day. Instruction to wipe the teeth and oral mucosa twice a day with a chlorhexidine 0.2% moistened-sterile gauzed was done. Topical vaselin album was given as lip ointment for the...
Cheilosis. The ulcer resulted from the sharp edge of tooth #17 was managed palliatively. Ideally, the grinding of the sharp edge of the tooth #17 was done, however the procedure should be postponed after the patient’s condition was stable. When the patient’s condition was stable and tolerated, the other treatment for eliminating the focus of infection could be done in the dental office.

Case 2
A 67 year-old female patient was treated in the inpatient ward of the Cipto Mangunkusumo Hospital with diagnosis of ACS. The Glasgow Coma Scale was 6. The systemic condition of the patient included dyspepsia, dementia, anemia, normocytic normochromic anemia, low back pain, e.c. fracture vertebral compression, ulcerus decubitus, immobilization, hypoalbuminemia, e.c. low intake, fall history, vision and hearing disturbance, urine incontinence, myokard infark septal and myoanatremia. The patient also on polypharmacy condition, receiving many medications for her condition including: analgetic-antipyretic, antiemetic and prokinetic agent, gastrointestinal drugs, injection of antihistamine, mouthwash and moisturizer cream. The blood chemistry showed that the levels of haemoglobin, haemotocrit, red blood cells, eosinophil, lymphocyte, albumin, total iron binding capacity, cholinesterase, and blood calcium were decrease and increased levels of erythrocyte sedimentation rate (ESR), white blood cells, globulin, and transferrin saturation. The intraoral examinations revealed multiple radices on teeth #11,14,17,18,26,27,28,34; missing teeth #16,32,35,36,37,38,41,42,44,45,46,47,48. Overall, she was also functionally disabled and was unable to communicate her oral health needs.

The same as Case 1, this patient could not receive regular dental service; however, she received regular care from the medical and nursing professionals. The treatment goals for this patient were improving comfort, managing oral pain and infection control. Good communication, information, and education related to the patient’s condition were given to the nurse in the inpatient ward. The information regarding the importance of keeping patient’s oral hygiene, and emphasize on the effect of bad oral health condition to patient’s general health were also given. The nurse was asked to facilitate patient’s tooth brushing twice a day. Instruction to wipe the teeth and oral mucosa twice a day with a chlorhexidine 0.2% moistened-sterile gauzed was done. When the patient condition was stable and tolerated, the other treatment for eliminating the focus of infection and fabrication of dentures could be done in the dental office.

Discussion
According to the WHO, definitions of old age or elderly fell into three main categories: 1) chronology; 2) change in social role; and 3) change in capabilities. The changes have several impact, i.e. deterioration of psychological performance and body function, slowing of sensory process and central control, and declining of intelligence. Those condition could lead to various health problems such as: visual impairment, hearing problems, urinary problems, falls and fractures, hypertension, arthritis, anemia, depression, malnutrition, overweight/obesity, and dental problems. Characteristic of disease processes in the elderly are the tendency for locomotory functions in the elderly to be lost or seriously diminished and increase the frequency of acute symptomatic confusional states (ACS).

The elderly with ACS have a complex medical problem that could worsen their condition and undergoing treatment for their disease. The systemic condition and treatment could cause dental problems and some are contraindication for dental invasive procedures. With increasing disability, functional impairments, and declining cognitive functions, dental team faced with important ethical issues that have an impact on dental diagnosis, treatment planning and how dental care is provided. The dental treatment is very important for those elderly because oral disease is cumulative and become more complex overtime, have negative effect on quality of life and has significant impact on general health because it can be a portal of entry for microbial infections that affect the whole body. The oral health problems than can be portal of entry of systemic disease are root or pulp caries, root tips, chronic gingivitis, periodontal disease, and impacted or embedded teeth. Thus, the patients were recommended to do extraction on their root tips but on Case 1 the invasive procedure was contraindicated because the patient consume anticoagulant agent (Heparin). It is agitating, because if the tooth is not removed, then the patient will continue have ulceration on her upper right buccal mucosa.

The dentist should design the best treatment plan for patients considering her stage of illness, indication and contraindication for the dental procedures that have to be taken. The strategy of oral health management to these patients is (1) Making collaboration between physicians, dentists and related healthcare providers; (2) Applying the principles of palliative care; (3) Treat the patients based on their stage of illness and (4) Personalized Oral Health Care. Chen et al in 2015 propose “a stage-appropriate oral healthcare plan” and shows on Table 1.

Table 1. The Proposed Stage-appropriate Oral Healthcare Plan

<table>
<thead>
<tr>
<th>Duration</th>
<th>Decline Stage</th>
<th>Pre-Active Dying Stage</th>
<th>Actively Dying Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years-Months</td>
<td>Months-Weeks</td>
<td>Weeks-Days</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Major Oral Health Problems</th>
<th>Pre-Active Dying Stage</th>
<th>Actively Dying Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xerostomia</td>
<td>Xerostomia</td>
<td>Xerostomia</td>
</tr>
<tr>
<td>Loss of oral function</td>
<td>Oral infection</td>
<td>Oral infection</td>
</tr>
<tr>
<td>Oral infection</td>
<td>Oral pain</td>
<td>Oral pain</td>
</tr>
<tr>
<td>Oral pain</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Treatment Goals

- Improve quality of life
- Maintain function and nutrition
- Prevent pain and infection

- Improve comfort
- Manage oral pain
<table>
<thead>
<tr>
<th>Prevent systemic complication of oral disease</th>
<th>Meet personal needs</th>
<th>May consider invasive procedures in office treatment if tolerant</th>
<th>Bedside comfort care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cautious with invasive procedures</td>
<td>Avoid invasive procedures</td>
<td>Avoid aggressive, intensive treatment</td>
<td></td>
</tr>
</tbody>
</table>

The patients categorized as pre-active dying stage and recommended to maintain the oral hygiene, with the help from nurse in inpatient ward or the caregivers. The main purposes of the treatment, based on her stage of illness, are improving comfort, manage oral pain, and control infection. The treatment is taken on the bedside because of the patient’s limitation of movement. The principal of palliative care must be applied on both patients to maintain their general health and prevent the systemic condition getting worsen. The invasive procedures for patients can be taken if the patient’s condition improved. In Case 1 must enclose the recommendation from internist and laboratory results of the level of PT, APTT, complete blood count, and blood sugar. The dentist should observe the patient condition periodically to optimize the treatment plan that has been implemented.

**Conclusion**

There are many considerations we should focus when we treated older adults with multiple systemic conditions. The treatment plan should be designed with involving team of physicians, dentist and related health care providers to increase patient’s health status and reduce the possibility of systemic complication. The dentist must be reliable to determine which treatment is best for patient based on the results of complete examinations and systemic condition. Thus, it may improve the patient’s quality of life.

**References**