Optimizing Palliative Management For End-of-Life Elderly Patient With Non-Hodgkin Lymphoma : A Case Report

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Abstract.

Diffuse Large B-Cell Lymphoma (DLBCL) is the most common type of non-Hodgkin's lymphoma (NHL) in the elderly population. DLBCL is potentially curable with immunochemotherapy but becomes more difficult to cure as patients get older leading to poor prognosis. Palliative care is essential for patients with this condition to relieve their suffering and improve their quality of life. Treatment strategies of DLBCL in elderly patients remain a challenge for physicians and the patients. An 87-year-old male presented with difficulty swallowing for the past four months, worsened since last week. Throat pain, obstruction sensation, and confined to bed due to weakness. The patient has been diagnosed with DLBCL and refused chemotherapy. Dark-colored residue was observed in the nasogastric tube. There is an enlargement of right cervical lymph-node. His laboratory workup shows Hb 8,9mg/dL, histopathological of the oropharyngeal tissue showed Diffuse Large B-Cell Lymphoma, activated B-Cell subtype. Patient was treated through multidisciplinary approach to improve overall condition and his quality of life. The management of elderly patients with DLBCL requires multidisciplinary approach that considers patient preferences and quality of life. Elderly Prognostic Index are needed to evaluate patient condition, prognosis, and guide therapeutic decisions. Palliative therapy is an approach aimed at improving the quality of life of patients facing life-threatening illness through early identification and comprehensive management of pain, physical, psychosocial, and spiritual problems. Management of DLBCL in elderly patients requires balancing risks and benefits considering frailty, comorbidities, and overall functional status. Regardless of therapeutic choice, palliative and supportive care should be provided through a multidisciplinary approach to relieve suffering and preserve quality of life. Treatment decisions should be made involving the patient and their family, focusing on the ultimate goals of care in accordance to their wishes.

Keywords: *Diffuse large B-Cell lymphoma; elderly patient; palliative care; end-of-life, frailty assessment; multidisciplinary approach and prognostic index.*

I. INTRODUCTION

Diffuse Large B-Cell Lymphoma (DLBCL) is the most common type of non-Hodgkin's lymphoma (NHL), with incidence rate around 30% to 40% in the elderly population [1]. Annually, 20,000 new cases are diagnosed in the United States (US), with 50% of patients are aged more than 70 years [1], [2]. As a result of progressive improvement in life expectancy, the number of lymphoma in elderly population is expected to grow over the next few years [3]. Age over 60 is an unfavorable prognostic factor in DLBCL according to International Prognostic Index (IPI). In the US, 5-year survival in DLBCL is 78% for patients below 55, and only 54% for those over 65. Patients aged 80 to 85 years and >85 years survival rate was 15% and 8%, respectively [1], [4]. DLBCL is potentially curable with immunochemotherapy but as the patients get older and more frail, the treatment gets more difficult and the outcomes are less favorable [5]. R-CHOP (rituximab, cyclophosphamide, doxorubicin, vincristine, and prednisone) are generally the first-line regimen for DLBCL, with overall cure rate about 60% - 70% [6]. Although treatment for elderly patient can result in remission, the incidence of adverse reactions to chemotherapy inceases as the patient gets older.

Elderly patients have decreased tolerance and increase risk of adverse event against chemotherapy because of limited bone marrow reserve, altered drug metabolism, presence of comorbid conditions, or impaired physical function [4]. When managing elderly patients with lymphoma, clinicians need to establish whether the patient is fit enough to tolerate curative-intent regimen or is too frail and at risk of being exposed to unnecessary toxicity or ineffective therapies [6], [7].Patients who are deemed not suitable or decline

immunochemotherapy will eventually progress to end of life phase. These patients need significant palliative care to relieve their suffering and improve their quality of life (QoL). Palliative care is an approach that improves QOL of patients facing life-threatening illness through the prevention and relief of suffering by early identification and impeccable treatment of pain and other physical, psychosocial, and spiritual problems [8], [9]. Managing DLBCL in elderly patients poses a challenge both for physicians and the patients in determining treatment strategies. This case report will highlight the importance of palliative therapy in elderly patients at their end of life phase.

II. CASE ILLUSTRATION

An 87-year-old man admitted to hospital with complaints of difficulty swallowing solid food for the past four months and progressively worsened during the past week, patient can only take two-three spoonfuls of porridge and water, bedridden for one week due to progressive weakness. Patient feel pain in his throat and a sensation of obstruction while swallowing. The patient was diagnosed with Diffuse Large B-Cell Lymphoma (DLBCL) and chose to declined chemotherapy due to his old age and risk of adverse chemotherapy reaction. Physical examination showed a palpable enlargement of right cervical lymph node with the size of 2x2 cm, the patient was hypotensive with 75/50 mmHg. A nasogastric tube was inserted to provide enteral nutrition for the patient, following the insertion, dark-colored residual fluid was coming out of the tube, indicating upper gastrointestinal bleeding.

His laboratory workup shows Hb 8,9 mg/dL, Potassium 3,2 mEq/L, LDH 480U/L, Histopathological of the oropharyngeal tissue showed Diffuse Large B-Cell Lymphoma, activated B-Cell subtype. The immunohistochemical results were CK (-), CD 45 (+), CD 20 (+), CD 3 (-), BCL 6 (+), MUM 1 (+), Ki-67 (+, 70%). Head CT scan with contrast showed A mass in the right nasopharynx with enlargement of cervical lymph nodes. Chest X-ray and abdominal ultrasound shows no abnormalities and no metastatic nodule. Patient has history of coronary arterial disease, heart failure with preserved ejection fraction and moderate-severe aorta valve stenosis. In the present case, the patient was treated through multidisciplinary approach involving cardiologist, nutritionist, and physical medicine and rehabilitation teams to improve the patient's clinical status and his QoL.

III. RESULT AND DISCUSSION

DLBCL is the most common Aggressive Lymphoma (AL) in elderly, one-third of them are above 75 years old [5]. Frailty in the elder population results in more vulnerability following a physiological stressor such as antineoplastic treatments, including chemotherapy, immunotherapy, and targeted agents. The coexistence of comorbidities such as heart failure and renal failure increases the risk of drug accumulation, toxicity and organ damage [5], [10]. Hence, it is essential to consider the degree of frailty and potential adverse effect of the treatment. Older patients have decreased hematopoietic reserve, resulting in more cytopenias, and have higher rates of neutropenic fever, often despite receiving lower doses of chemotherapy and growth factor support 2. European Society for Medical Oncology (ESMO) recommends to do Staging and Risk Assessment in all of DLBCL patients. Scoring systems for the frail and elderly such as International Prognostic Index (IPI) or age-adjusted IPI, Elderly Prognostic Index (EPI) can be considered [11].

Table 1. Elderly Prognostic Index [12].

Factor	Points	EPI Score	3-Year Overall Survival
sCGA Group 1	0	Low Risk: 0-1	87%
sCGA Group 2	2		
sCGA Group 3	3	Intermediate risk: 2-4	69%
IPI 0-1	0		
IPI 2	1		
IPI 3-5	3	High risk: 5-7	42%
Hemoglobin < 12 g/dL	1		

The EPI, developed by *The Fondazione Italiana Linfomi* (FIL) has been validated as a meaningful tool to assess outcomes with first-line treatment in DLBCL. The EPI uses simplified comprehensive geriatric assessment, IPI and hemoglobin level to classify patient as low risk, intermediate risk or high risk with 3-year overall survival rates of 87%, 69%, and 42% respectively [2], [12]. This patient is ≥80 years old, bedridden and depends on his caregiver for daily activities, thus classified into sCGA group 3. Patient also had elevated LDH serum and ECOG performance status ≥2, thus classified into IPI 3-5. Patient had Hemoglobin level < 12 g/dL. According to these scores, patient falls into High-Risk EPI Score and have 42% of 3-Year overall survival.

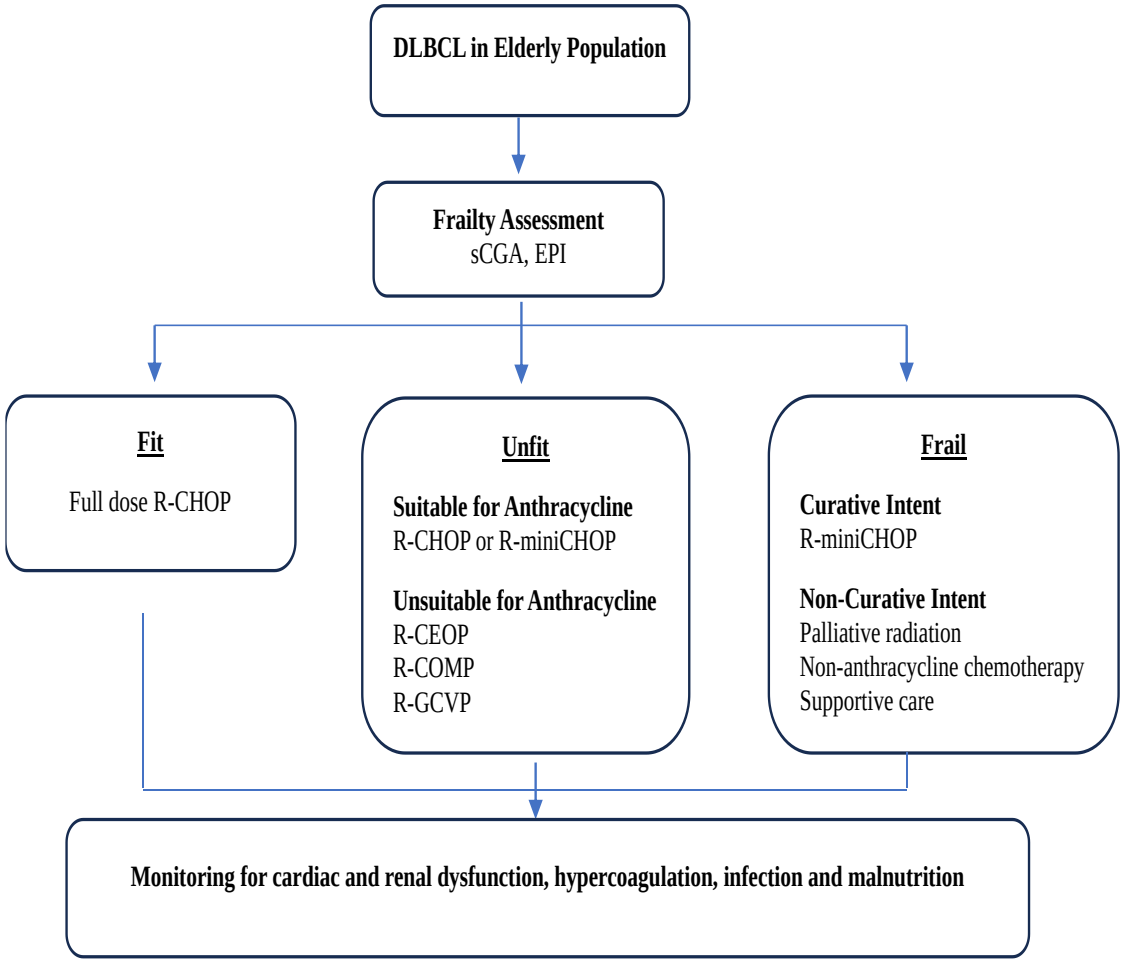

Fig 1. Management for DLBCL in Elderly [5], [11].

R-CEOP, rituximab - cyclophosphamide, etoposide, vincristine, prednisone; R-COMP, rituximab - cyclophosphamide, liposomal, doxorubicin, vincristine, prednisone; R-GCVP, rituximab - gemcitabine, cyclophosphamide, vincristine, prednisone.Treatment decisions should be discussed with the patient, considering their QoL, adverse health outcomes, and their preferences. Frailty assessments are based on clinical studies to predict treatment tolerability and unfavorable outcomes, and allow physicians to maximize treatment efficacy and minimize toxicity. In frail patients, it is generally accepted that the morbidity associated with even reduced-dose immunochemotherapy is unacceptably high and curative-intent therapy may not be feasible [2], [13]. After discussing through multidisclipinary approach about the potential benefits, risks, and goals of care, patient and his family decided to decline chemotherapy, the next step of patient management should focus on supportive and palliative care for end-of-life patient, aiming to relieve symptoms, maintaining comfort, and preserve QoL.

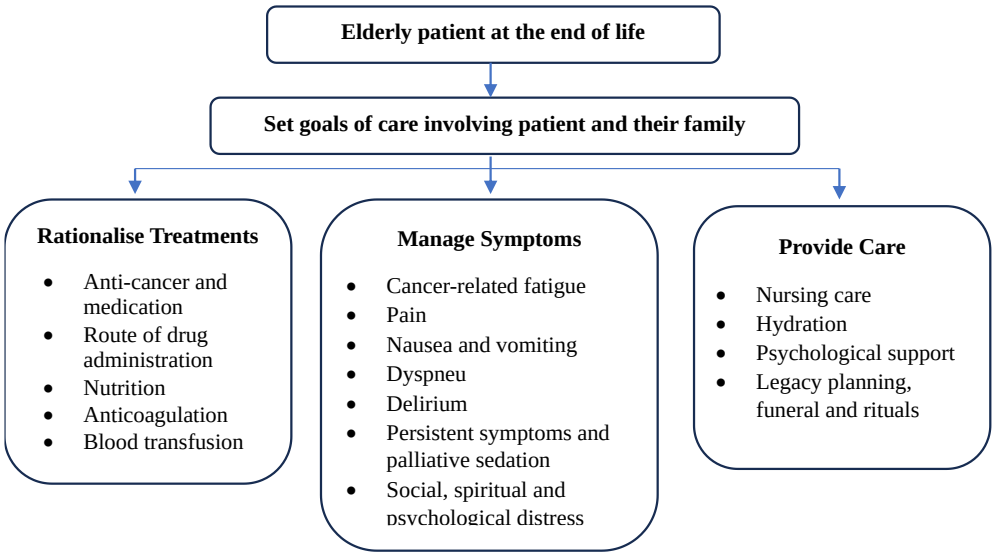

Fig 2. Palliative Care for Elderly at the End of Life [8].

According to ESMO, anemia and iron deficiency are common complications in hematological malignancies. Blood transfusion is indicated if patient's hemoglobin level below 7-8 g/dL or those with severe anemia symptoms. Patients with cardiovascular comorbidities, especially coronary heart disease, are recommended to have minimum 9 g/dL hemoglobin level [14]. Advanced-stage cancer and reduced mobility in frail patients increase the risk of developing deep vein thrombosis (DVT) or pulmonary embolism (PE). Hospitalized patients face a higher risk developing VTE than nonhospitalized patients. According to American Society of Hematology, VTE prophylaxis may not benefit much for patiens at the end of life, particularly if their baseline VTE risk is low or potential risk for major bleeding is high. Risk of bleeding can be assessed using the International Medical Prevention Registry on Venous Thromboembolism (IMPROVE) Bleeding Risk Score. Score ≥ 7 indicate high risk of bleeding, <7 indicate low risk of bleeding [15]. This patient had a score ≥ 7 indicating high risk of bleeding, therefore, VTE prophylaxis was not administered.

Table 2. International Medical Prevention Registry on Venous Thromboembolism (IMPROVE) Bleeding Risk Score [16].

Risk Factors	Points
Moderate renal failure (GFR 30–59 vs. ≥60 ml/min/m²)	1
Male vs. Female	1
Age, 40–84 vs. <40	1.5
Current cancer	2
Rheumatic disease	2
Central venous catheter	2
ICU/CCU	2.5
Severe renal failure (GFR <30 vs. ≥60 ml/min/m²)	2.5
Hepatic failure (INR >1.5)	2.5
Age, ≥85 vs. <40	3.5
Platelet count <50 × 10⁹	4
Bleeding in the three months before admission	4
Active gastroduodenal ulcer	4.5

Patients with advanced cancer may have a life expectancy of several months to several years. In these patients, deficits in nutritional status may impair performance status, QoL, tolerance to anticancer treatments, and survival. In this patient, total energy expenditure should be carefully calculated. The patient requires 25–30 kcal/kg/day of energy and 1–1.5 g/kg/day of protein. Enteral nutrition should be initiated gradually over several days to prevent refeeding syndrome [17]. In elderly patients with aggressive NHL, treatment decisions often require choosing between conservative therapy that preserve QoL and potentially curative therapy that carries higher risks of toxicity. Most studies on this topic do not address the correct endpoints. Patient should be involved in the discussion and fully informed in the decision-making process regarding QoL [18].

IV. CONCLUSION

Management of Diffuse Large B-Cell Lymphoma (DLBCL) in elderly patients requires consideration of frailty, comorbidities, and overall functional status. Patients often need to choose between conservative therapy or curative intent therapy weighing the risks and benefits. There is no correct endpoint for such cases. Palliative and supportive care at the end of life should be given regardless their choice, through a multidisciplinary approach involving physicians, nurses, nutritionists, and other healthcare professionals. Treatment decisions should be made involving the patient and their family, discussing the ultimate goals of care for the patient to preserve their quality of life and ease their suffering, in accordance to their wishes.

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