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# Pharmacological and Psychotherapy Pain Management in Adult Acute Lymphoblastic Leukemia (ALL) with Depressive Organic Disorder Patient: Case Report

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**Abstract---Background:** Acute Lymphoblastic Leukemia (ALL) or also called Acute Lymphocytic Leukemia is a cancer of the blood and bone marrow. ALL is strongly related to pain due to the nature of the disease where leucocyte cells infiltrate organs causing pain, and also due to some of its treatments which can cause pain as a side effect. **Case report:** A female patient, aged 45 years, consulted the Consultation-Liaison Psychiatry, sub-Palliative Department with a complaint of pain. The patient felt severe pain, intermittent but kept getting worse over time, with VAS of 7-8 causing her to feel weak and have difficulty sleeping, with a history of Paracetamol and Codeine as analgetic. When the pain peaked, the patient felt weak and sometimes crying for no reason. She became more emotional since her illness and she's not an emotional person before. Patients also tend to get tired and lost enthusiasm in doing activities. Patient with anankastic personality character, acting out, and sublimation defense mechanism, was diagnosed with Organic Depressive Disorder (F06.32); ALL ECOG2, mild anemia, suspect CAD with differential diagnosis of ischemic due to supply & demand mismatch (anteroseptal ischemia), uterine mass et causa suspected leukemic infiltration with differential diagnosis of uterine myoma. The patient was treated with psychopharmacological therapy of Morphine sulfate tablet 10 milligrams given orally every 12 hours or can be increased when needed during observation. The patient received non-psychopharmacotherapy therapy of supportive psychotherapy, relaxation therapy, Cognitive Behaviour Therapy (CBT), and psychoeducation for the patient and family. **Conclusion:** With a combination of psychopharmacotherapy and non-psychopharmacotherapy, it is expected to overcome the patient's complaint of pain and treated it comprehensively, in the hope for a better quality of life for the patient.

**Keywords---**acute lymphoblastic leukemia (ALL), pain, relaxation, supportive psychotherapy.

## Introduction

Acute Lymphoblastic Leukemia (ALL) or also called Acute Lymphocytic Leukemia is a cancer of the blood and bone marrow. This type of cancer usually gets worse quickly if left untreated. ALL is the most common type of cancer in children although it can also occur in adults (20%). ALL is cell malignancy that occurs as a result of lymphoid cell proliferation which is blocked in the early stages of differentiation. Healthy people have bone marrow that produces blood stem cells (immature cells) that become mature blood cells over time. A stem cell can become a myeloid stem cell or a lymphoid stem cell (American Cancer Society, 2019). The most common type of leukemia is ALL, which accounts for about 80% of all leukemia cases and is followed by nearly 20% of acute myeloid leukemia (AML) (WHO, 2018; Balliot et al., 2019; Bassan et al., 2004; Preti et al., 1994).

The treatment effect of ALL can cause a pain response. Patient comfort is the main point in providing interventions and reducing other complications that occur in patients in accordance with Kolcaba's theory of comfort which prioritizes the level of safety and comfort of patients when treated in a hospital. Each individual has different characteristics in terms of social, physical, psychological, spiritual, and cultural which differentiates each person in response to perceived pain. With this, it is necessary to examine the pain response found in patients and more broadly strategies to reduce pain conditions holistically (Sari, 2019).

### Case Report

A female patient, YFB, 45 years old, was consulted to the Consultation-Liaison Psychiatry, sub-Palliative Department with a complaint of pain that leads to difficulty sleeping. The patient was interviewed at the inpatient ward of Prof. Dr. I.G.N.G. Ngoerah General Hospital. The patient was interviewed in a lying position, has thin stature, and with facial expression appeared to be in pain, sometimes with grimaces, looking weak. During the interview, the patient could maintain eye contact and answer questions in a weak voice softly. The patient could correctly state her name, age, where she was right now, the time of examination, and who is accompanying her at the time. The patient was admitted to the hospital because of severe abdominal pain that had been coming and going for the past few months, and kept getting worse, making the patient weak (Gökbuget & Hoelzer, 2009; Ducore et al., 1983; Howard & Pui, 2002). The patient said that she felt uncomfortable because of the pain in her stomach and also feeling of heartburn, intermittently, getting worse over time. Sometimes when the pain peaked, the patient cried because she couldn't stand it even though she had tried to divert her mind. The pain felt pressing upwards to her chest and at times she felt full and tight on her chest when the pain peaked. The patient also complained that her body felt weak and a bit dizzy because there had been a lot of bleeding from the vagina in the last 3 days to the point that she had to use diapers to contain the bleeding, in day she changed diapers for 2-4 times, with red bleeding and lots of clots. The patient hoped to get better and to go home because she kept thinking about and missed her children. The patient felt sad when she remembered her children even though she knew that her children were safe because they were entrusted to the family's house which still lives nearby. The patient said that since she was sick, she often felt sad, and sometimes she cried for no explainable reason. The patient felt more emotional since her illness, admitting that before the illness, she was persistent, organized, hardworking friendly, and had many friends; not easily becoming emotional (Plasschaert et al., 2004; Mustika et al., 2017; Herman et al., 2022). The patient also felt tired easily and sometimes had no drive to do anything. The feeling of hopelessness, uselessness, the desire to do self-harm are denied. Prolonged sad history, feeling excess energy, lots of ideas previously were denied; no history of mental illness. The patient had never heard sounds that couldn't be heard by others or saw things that couldn't be seen by others. The patient often had trouble sleeping and also often woke up in between, with a weak and sleepy feeling in the morning. Daily self-care was carried out with the help of others. Decreased appetite due to stomach pain and nausea. The patient was diagnosed with ALL at the beginning of 2022, and had undergone series 1 chemotherapy but after experiencing allergic symptoms during the 2nd series of chemotherapy, the patient did not want to continue anymore. On December 2022 enlargement of the organs was found and after examination, there was a suspicion of a tumor in the uterus. The patient didn't smoke, drink coffee or alcohol, taking any addictive substances. The patient's father had a history of asthma but other than that there's no major health problem within the family. The patient had a history of taking Paracetamol and Codeine.

On physical examination, vital signs were within normal limits. General status showed anemic palpebral conjunctiva, stomach distention with tenderness and splenomegaly (Schuffner IV), and Visual Analog Scale (VAS) within the range of 7-8. On psychiatric examination status, the general impression was looking weak, facial expression in pain, with adequate verbal and visual contact; clear consciousness; dysphoric mood with appropriate affect; thought process of logic realistic, and coherent, with preoccupation to her pain; no hallucination nor illusion; insomnia of mixed type was present, with hypobulia, no raptus; composed psychomotor. An abdomen ultrasound examination showed hepatosplenomegaly, suspect of uterine myoma. Blood smear examination showed normocytic normochromic anemia with thrombocytopenia, and neutropenia (Pieters & Carroll, 2008; Jabbour et al., 2005; Paul et al., 2016).

For the multiaxial diagnosis, based on Guidelines for Classification and Diagnosis of Indonesian Mental Disorders III (PPDGJ-III), namely Axis I is Organic Depressive Disorder (F06.32). Axis II is an Anankastic personality character with acting out and sublimation defense mechanism. As for Axis III, ALL ECOG2 (Post chemotherapy Larson session I, mild anemia, suspect CAD with differential diagnosis of ischemic due to supply & demand mismatch (anteroseptal ischemia), uterine mass et causa suspected leukemic infiltration with differential

diagnosis of uterine myoma. Axis IV is a problem with illness. And lastly Axis V is a Global Assessment Functioning of 60-51 during the examination and 90-81 as the best GAF for the last year.

As for psychopharmacotherapy, the patient was given Morphine Sulfate (MST) 10-milligram tablet for every 12 hours orally. Non-psychopharmacotherapy for the patient includes supportive psychotherapy, relaxation therapy, Cognitive Behaviour Therapy (CBT), and psychoeducation for the patient and family. The patient was also treated by the Department of Internal Medicine-Hematology and Oncology, Dermatology, and Cardiology.

## Discussion

Patient meets the criteria of Unspecified mental disorder due to brain damage and dysfunction and to physical disease (F06) (Indonesian Ministry of Health, 1993):

- The presence of disease, brain damage, and dysfunction, or systemic physical illness is known to be associated with one of the mental syndromes listed.
- There is a temporal relationship between the development of the underlying disease and the onset of mental syndromes.
- Recovery from mental disorders after correction or elimination of the underlying cause
- There is no evidence to suggest an alternative cause of the mental syndrome (such as the strong influence of family history or the influence of stress as a precipitator)

The patient felt depressive for no explainable reasons, also felt tired easily, and sometimes had no drive to do anything which specifically points the diagnosis to Organic Depressive Disorder (F06.32) (Indonesian Ministry of Health, 1993).

The negative impact of ALL is pain which is the most common problem that is often encountered. If the sufferer feels pain it will affect the emotional, cognitive, and physical, inability and understanding of feelings (such as anger, sadness, fear, and worry) which will have an impact on the brain's work in processing pain which can increase the pain experienced so that it interferes with the quality of life. Pain is a problem that needs to be addressed to improve the quality of life for ALL sufferers. Management in dealing with pain problems in patients with ALL includes a pharmacological approach by administering analgesic and non-pharmacological drugs (Hoffbrand et al., 2017; Kozłowska & Khan, 2018).

Symptoms of ALL pain can occur in various places, namely pain in the bones and joints, abdomen, chest, and peripheral neuropathy; this includes pain related to the therapy given, such as pain due to chemotherapy and radiotherapy, stem cell transplantation, and bone marrow aspiration. Symptoms of pain in ALL patients are chronic or chronic, so the pain that is felt greatly affects or interferes with the individual's ability to maintain self-care (Potter & Perry, 2010; Hoffbrand et al., 2017). Pharmacological treatment of physical pain, both acute and chronic, uses World Health Organization's (WHO) three-step analgesic ladder guideline (Figure 1). In 2014 this guideline was modified (Figure 2) by adding non-pharmacological therapies and adding one more ladder for chronic pain or palliative care (Vargas-Schaffer & Cogan, 2014).

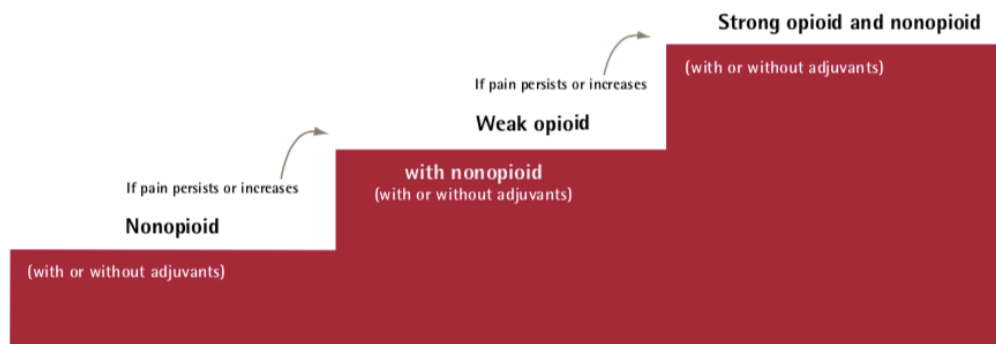


Figure 1. WHO Three Step Ladder (Vargas-Schaffer & Cogan, 2014)

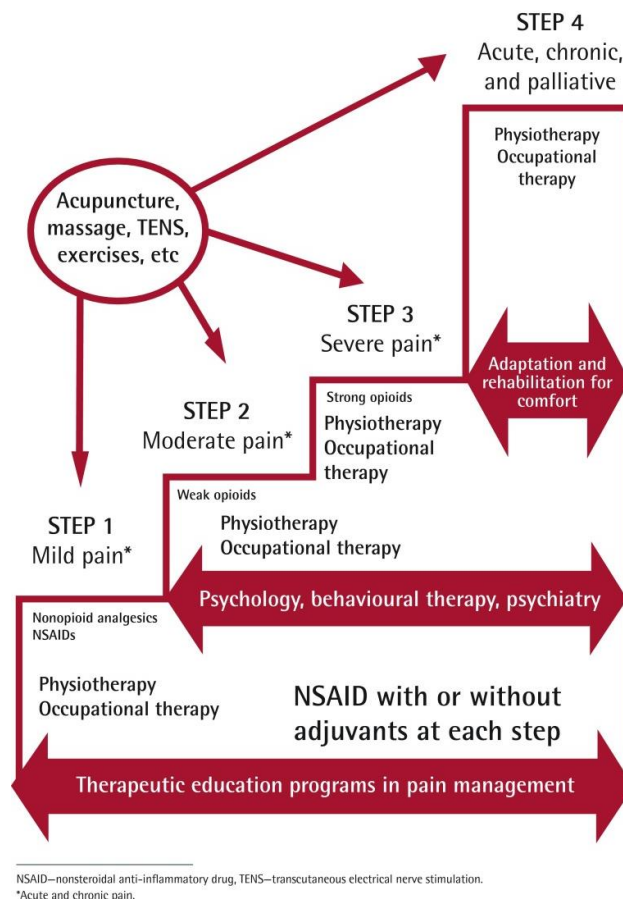


Figure 2. Revised 4-step analgesic ladder (Vargas-Schaffer & Cogan, 2014)

The patient had a history of receiving non-opioid (Paracetamol) and weak opioids (Codeine) to manage the pain but didn't really succeed. The patient felt severe pain with VAS of 7-8 that needs strong opioid based on the step ladder, thus, morphine is the drug of choice for this case, which is Morphine Sulfate (MST) with starting dose of 10 milligrams given every 12 hours orally. The revised 4-step analgesic ladder includes educational and other non-pharmacological programs. The goal is to make pain management a patient-centered, multidisciplinary, complementary and integrative medical approach. Therapeutic education programs for patients should start from the first ladder, and continue until the top of the ladder. In the second ladder, consultations with psychiatry and physiotherapists can be used as adjuvant therapy (Vargas-Schaffer & Cogan, 2014). In this case, consultation with a psychiatrist has been done, with non-psychopharmacotherapy (psychotherapy) approaches including supportive psychotherapy, relaxation therapy, CBT, and psychoeducation.

What a person thinks about the pain she is experiencing has an influence on her life and on how much pain she feels. Negative thoughts about pain will focus one's attention on unpleasant aspects and make the pain felt worse. Various psychotherapy techniques can be offered in the treatment of patients dealing with pain, with supportive psychotherapy being mostly used in such cases. Letting the patient know that someone is "in her corner" and that she is not alone in her suffering can provide such comfort. The therapist tries to support the patient's existing healthy defenses by offering reassurance and allowing the patient to acknowledge and express their fears and concerns in a non-judgmental way. Concrete strategies to help control the pain can also be offered by a supportive therapist (Songer, 2005).

Relaxation techniques are non-pharmacological methods that can be useful for reducing pain, for example, slow deep breathing (SDB) relaxation, classical music relaxation, and Benson relaxation techniques (Ristiyanto & Hartoyo, 2016). SDB relaxation, is a form of breathing exercise consisting of abdominal (diaphragmatic) breathing and purse lips breathing. SDB will stimulate the autonomic nerves that affect oxygen demand by releasing neurotransmitters. The sympathetic nerve response from SDB is to increase body activity. Meanwhile, the parasympathetic nerve response is to reduce body activity (Kozier et al., 2010). Distraction can also be done, namely

the technique of diverting the client's attention to other things, especially pleasant things with the aim of reducing awareness of pain and even increasing tolerance of pain; one of the distraction techniques is listening to music. Psychoeducation is also given because it's important for families to understand the patient's current condition and participate in treatment (Potter & Perry, 2010).

## Conclusion

Holistic pain management includes pharmacological and psychological therapy synergically. The patient had a history of nonopioid and weak opioids to manage the pain and didn't show much improvement so therapy from Psychiatry is the administration of strong opioids with the aim of reducing the severe pain experienced by the patient so that the patient is expected to rest better and comfortably; thus, improving her quality of life as well. Opioid administration can be increased according to need, where when the goal is reached, this class of drugs will be tapered off. For non-pharmacological therapy, the patient was given relaxation therapy, CBT, SDB relaxation, distraction, supportive psychotherapy, and family psychoeducation in the hope these can help the patient reduce pain levels.

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