

CHAPTER 1

INTRODUCTION

1.1 Introduction

Blood transfusion is the process of transferring blood or blood components such as plasma, red blood cells, or platelets from one individual (donor) to another (recipient) (Sutjahjo, 2015). The need for blood transfusion in this world is increasing where approximately 1 out of 7 patients who are admitted to hospital requires a blood transfusion. The need for blood in Indonesia has reached around 5.1 million bags per year, while the supply of blood and its components is currently only 4.6 million bags which makes it still lacks a blood supply of around 500 thousand bags (Wardati et al., 2019). Red blood cell or other blood product transfusion is a common intervention in the intensive care unit (ICU) patients. It has been estimated that more than 40 percent of patients in ICU receive red blood cell transfusion, in which 90 percent are experiencing stable anemia (Corwin et al., 2004). About one-third of critically ill patients in the intensive care unit (ICU) received a blood transfusion during their stay (Lelubre and Vincent, 2011).

Blood transfusion is a potentially life-saving procedure by replacing the loss of blood due to surgery, injury, and certain medical conditions. Transfusion of blood and products should be done to treat conditions that are likely to cause severe morbidity or mortality which cannot be treated and prevented by other procedures (WHO, 2020). In addition, blood transfusion also has some risks thus it must be done properly and according to the indications. According to the World Health Organization (WHO),

unnecessary and unsafe transfusion carries the risk of adverse reaction and transfusion-transmissible infections such as HIV, hepatitis B, hepatitis C, and syphilis.

Blood transfusion practices include planning, providing blood, and distributing blood which are facilitated by the blood transfusion unit (*Unit Transfusi Darah/UTD*) and also giving blood to the patients which is facilitated by the hospital blood bank (*Bank Darah Rumah Sakit/BDRS*). The blood transfusion unit will provide the blood or blood component to the hospital blood bank according to the blood requests. Blood or blood components sent to the hospital blood bank for transfusion should be tested for ABO and Rhesus blood group in advance. It is also essential for the blood and blood component to be tested for the transfusion-transmitted disease. Blood units will only be sent to the hospital if the screening for transfusion-transmitted disease is non-reactive. Prior to transfusion, pre-transfusion testing including antibody screening is also done to confirm the presence of antibodies in the recipient that will react to the donor red cells when transfused (Kementerian Kesehatan Republik Indonesia, 2015).

This research is conducted retrospectively, there was no previous data and research regarding blood transfusion practices in Intensive Observation Unit (*ROI*) RSUD Dr. Soetomo. It is intended to assess the clinical profile of blood transfusion practices in *ROI* including the pre-transfusion procedure and the transfusion itself. It will help to identify the indications and triggers for blood transfusion in hospitals and to reduce unnecessary and unsafe transfusion in order to prevent transfusion reactions in the future. The importance of this research is to be aware of the need of blood and availability of blood in the hospital blood bank along with obtaining blood supply from

Indonesian Red Cross Society (*PMI*) effectively without overusing and wasting blood units.

1.2 Problem Analysis

How is the profile of blood transfusion performed on the patients in Intensive Observation Unit (*ROI*) RSUD Dr. Soetomo in January-December 2020?

1.3 Research Objectives

Based on the formulation of problem that has been described above, the purpose of this research is:

1.3.1 General objective

To know the profile of blood transfusion performed on the patients in Intensive Observation Unit (*ROI*) RSUD Dr. Soetomo in January-December 2020.

1.3.2 Specific objectives

- 1) To know the clinical profile of patients undergoing blood transfusion in Intensive Observation Unit (*ROI*) RSUD Dr. Soetomo in January-December 2020.
- 2) To know the clinical department of the patient undergoing blood transfusion in Intensive Observation Unit (*ROI*) RSUD Dr. Soetomo in January-December 2020.
- 3) To know the result of pre-transfusion testing performed on patients undergoing blood transfusion in Intensive Observation Unit (*ROI*) in RSUD Dr. Soetomo in January-December 2020.
- 4) To know whether the blood transfusion practices for patients is rational according to the indication, blood volume and component, and duration of

transfusion in Intensive Observation Unit (*ROI*) RSUD Dr. Soetomo in January-December 2020.

- 5) To know the transfusion reaction on patients undergoing blood transfusion in Intensive Observation Unit (*ROI*) RSUD Dr. Soetomo in January-December 2020.

1.4 Research Benefits

1.4.1 Academic Benefit

This research is expected to enhance the understanding of the profile of blood transfusions on patients in Intensive Observation Unit (*ROI*) RSUD Dr. Soetomo in January-December 2020.

1.4.2 Practical Benefit

This research is intended to determine the indications of blood transfusion in order to predict the need of blood in hospital and also ensure the availability of blood in hospital blood bank which is obtained from Indonesian Red Cross Society (*PMI*).