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**NURSING CARE OF INEFFECTIVE CLEAN AIRWAY IN ACUTE  
BRONCHITIS PATIENT AT HARAPAN HOSPITAL, MAGELANG CITY**

Alfi Nur Azizah<sup>1)</sup> Hermani Triredjeki<sup>2)</sup> Tulus Puji Hastuti<sup>3)</sup> Susi Tentrem<sup>4)</sup>  
alfinurazizah415@gmail.com, hermanitriredjeki@gmail.com, hastutiekanto@gmail.com,  
susi0973@gmail.com

**ABSTRACT**

**Introduction:** Acute bronchitis is a lower respiratory tract infection with the main complaint being cough with the accumulation of phlegm. Obstruction of the airway due to phlegm or sputum that cannot be expelled interferes with the ventilation process. Management that can be done is to maintain pulmonary ventilation and ease of sputum production. The purpose of writing this scientific paper is to describe the ineffectiveness of airway clearance in children with acute bronchitis at Harapan Hospital, Magelang City. **Method:** This study uses a descriptive method with a case study approach that uses one client as the research subject. **Results:** The results of this study showed that the problem of ineffective airway clearance was related to airway obstruction (increased production of secretions) characterized by additional breath sounds of crackles. **Conclusion:** After nursing actions for 3x8 hours the problem of ineffective airway clearance was resolved with a nursing evaluation following the expected results including respiratory frequency within normal limits (20-30 x/minute), increased ability to expel secretions, no additional breath sounds, coughing. reduce.

**Keywords:** acute bronchitis; ineffective airway clearance; nebulizer

**Introduction.**

Lower respiratory tract infections are a major problem in the world as the most deadly infectious disease, ranking as the 4th leading cause of death after ischemic heart disease, stroke, and chronic obstructive pulmonary disease (COPD). It was recorded that in 2019, the number of deaths from lower respiratory tract infections reached 2.6 million people (WHO, 2020). Lower respiratory tract infections are the second cause of death in children under the age of 10 years (57.5%) in the world in 2019 with 85% of cases handled in Indonesia (GBD, 2020).

The data from the Central Java Provincial Health Office (2020) recorded as many as 47,634 cases (50.60%) of acute respiratory problems experienced by children. Based on the results of a preliminary study conducted at Harapan Hospital, Magelang City from 2022 to March there were 11 cases of bronchitis in children, meanwhile, in 2021 there were 19 cases of bronchitis in children (Medical Records of Harapan Hospital, Magelang City, 2022). Lower respiratory tract infections involve the respiratory tract below the larynx, including tracheitis, bronchopneumonia, bronchiolitis, and bronchitis (Mirkarimi et al., 2020)

Bronchitis is inflammation or inflammation that occurs in the bronchi, with 95% of cases caused by viruses, the rest are caused by bacteria or exposure to allergens. History, physical examination, and investigations need to be done to establish the diagnosis of bronchitis. The main complaint of clients with bronchitis is usually a cough for more than 2 weeks accompanied by an accumulation of phlegm. Sputum will be white and watery but over time it will become greenish yellow and thick due to infection, if an X-ray is taken, spots will appear in the respiratory tract (Alifariki, 2019).

Acute bronchitis has signs and symptoms of audible rhonchi on physical examination of the chest, the voice becomes heavier and rougher, wheezing, disappears in 10-14 days, fever, and sputum production. Chronic bronchitis with a cough that gets worse in the morning or in humid conditions and is accompanied by a cold or flu (Jannah, 2020). Bronchitis will get worse due to exposure to irritants, such as cigarette smoke, dirty air, dust, chemical fumes, etc. Attacks of bronchitis due to exposure to infectious and non-infectious agents (especially cigarette smoke) cause an inflammatory response that will cause a phase of dilation, congestion, mucosal edema, and bronchospasm (Utama, 2018).

Airway obstruction due to the accumulation of phlegm or Sputum in the respiratory tract interferes with the ventilation process. Treatments that can be done are actions to maintain pulmonary ventilation and oxygenation, increase comfort in breathing, ease in removing sputum, increase comfort in carrying out physical activities and prevent the risk of other oxygenation problems such as skin and tissue damage (Wayne, 2019). Chest physiotherapy nursing actions are considered effective in removing phlegm or sputum in the respiratory tract to reduce restore respiratory function, remove secretions from the bronchi, and facilitate the airway (Ningrum, H. W., Widyastuti, Y. & Enikmawati, 2019)

The description above regarding the problem of ineffective airway clearance in clients with Acute Bronchitis has a connection to meeting oxygen needs so it is necessary to immediately get good treatment so that it does not get worse and cause complications.

This review made the writer interested in writing a scientific paper with the title *Nursing Care Ineffective Airway Clearing in Children with Acute Bronchitis at Harapan Hospital, Magelang City*.

### **Methods.**

The design of scientific writing used is a descriptive method with the title "Nursing Care Ineffective Airway Clearing in Acute Bronchitis Patients at Harapan Hospital, Magelang City", namely by explaining and describing real, realistic, and actual phenomena made in a description with a realistic picture. systematic, factual, and accurate regarding the

facts, nature, and relationships between the phenomena being investigated (Rukajat, 2018).

The purpose of this study in general is to describe nursing care for clients with the problem of ineffective airway clearance in pediatric clients with acute bronchitis, specifically with an approach ranging from assessment, formulating a diagnosis, planning nursing actions, carrying out nursing actions, and evaluating nursing actions.

The location of this study was carried out at Harapan Hospital, Magelang City from January to May 2022 with the main study focus being the problem of ineffective airway clearance in children with a nebulizer and/or postural drainage. The steps of collecting data in this case study are interviews and direct observation. Analysis of the resulting data is described in the form of a narrative as a result of nursing care reports.

### **Result and Discussion.**

Researchers will describe the results of a research according to the stages of the nursing process including:

#### **1. Assessment**

The assessment in this study was carried out on February 16, 2022, at 13.00 data obtained. The client's mother said her child coughed continuously and could not expel phlegm. On February 15, 2022 at 21.00 the client is brought by the family to the ER with a hot condition accompanied by a dry cough and runny nose. The client's mother said it had been 2 days of fever and cold cough for  $\pm$  7 days. The results of the examination in the ER showed that vital signs were S=40.4°C, RR=25x/minute, N=110x/minute, SpO<sub>2</sub>= 95%, auscultation= rhonchi, CRT <2 sec, warm akral, petechiae -/-/-/-. The client's mother says before being taken to the RSH, check into the clinic and then be referred to the RSH ER. The client was transferred to the sandalwood room for further observation after taking blood and x-rays

At the initial stage of the study, the researcher obtained data that the client complained of coughing unable to expel phlegm, coughing is a common complaint in respiratory tract problems that occurs when cells along the respiratory tract are irritated, triggering air in the lungs with high pressure to flow out as a defense reflex to clear secretions that are trapped in the lungs. excessive. Mucus production in large quantities occurs as the body's mechanism to remove foreign irritant substances from the respiratory tract (Widagdo, 2016).

Assessment findings when lung auscultation examination heard additional breath sounds of crackles in both lung fields. Additional breath sounds, rhonchi, are continuous, low pitch sounds, similar to wheezes but larger in the airways in crackles, this indicates an obstruction in the airways due to secretions. Conditions associated with the occurrence of rhonchi are pneumonia, asthma, bronchitis, and bronchospasm (Marni, 2016).

The client's mother said that previously the client had a high fever and then received outpatient treatment at the Magelang City Hospital. The client's mother said her son had no history of respiratory diseases such as asthma or tuberculosis (pulmonary tuberculosis). The client does not have any food or drug allergies. The client's mother said that the family did not have a hereditary disease, but when the client's older brother had an illness, the client coughed up phlegm to shortness of breath. None of the family members are smokers.

Pregnancy history, when pregnant, the client's mother routinely checked her womb at the clinic, when An. S there are no problems in her pregnancy. The client was born normally or spontaneously with a weight of 3100 grams and a body length of 48 cm. The client was given exclusive breastfeeding for 6 months and then continued with formula milk, the client was cared for by both parents. There are no abnormalities in the child after birth. The client has received complete basic immunization.

History of growth and development, currently the client's weight is 21 kg and height is 110 cm. The client is in school-age development. At this time the client is sitting in grade 2 elementary school, and has been able to read, write, and do simple arithmetic.

Based on the results of the physical examination, the general condition of An. S is limp with *Compos mentis* level of consciousness. On examination of vital signs during the assessment in the Cendana room, the temperature was 36.5°C, respiratory rate 34 x/minute, pulse 116 x/minute, and SpO<sub>2</sub>: 98%. The results of the head-to-toe assessment obtained mesocephalic heads, symmetrical, with no lumps, black hair, and a clean scalp. The eyes are symmetrical, not sunken, the conjunctiva is not anemic, and the sclera is not icteric. Nose no polyps, nothing swelling, no oxygen cannula attached. Dry lips and clean teeth. Symmetrical ear location, no cerumen, no tenderness, no mass. No enlargement of the thyroid gland, no lesions. Skin color is tan, no lesions, skin feels warm, skin turgor returns in 2 seconds.

An examination of vital signs was performed on An. S obtained the results of temperature (S) 36.5°C, respiratory rate (RR) 34 x/minute, pulse (N) 116 x/minute, SpO<sub>2</sub> 98 %. Rees et al., (2020) state that the child's vital signs are within normal values, namely temperature 36.5°C – 37.5°C, pulse when awake for school age (6-12 years) 75-118 x/minute, the respiratory rate of children aged 20-30 x/minute, and SpO<sub>2</sub> > 94% (Sulistyowati, 2018). Increased respiratory rate as compensation to maintain lung ventilation (Yulia & Lestari, 2019).

The physical examination of the chest includes an examination of the lungs and heart. Lung examination, an inspection of right and left symmetrical lung movements, palpation of left and right vocal

fremitus, resonant percussion, and auscultation additional crackles were heard. Cardiac examination ictus cordial not visible, palpable on the 4th intercostal midclavicular left, dull percussion, auscultation no additional sounds S1 and S2 are regular.

Abdominal examination, inspection for no lesions, symmetrical abdomen, auscultation of bowel sounds 32 x/minute, no tenderness, and percussion tympani. The client's upper extremity is attached to a frequent infusion pump 42 ml/hour in the left hand while the lower extremity found no edema in both legs. The client's genitalia was not catheterized and there were no abnormalities.

Investigations include a complete blood count and chest X-ray. Complete blood count results show hemoglobin 13.8 g/dl (11.5-15.2), leukocytes  $3.46 \times 10^3/\text{mm}^3$  (4.5-13.5), platelets  $161 \times 10^3/\text{mm}^3$  (150-450), hematocrit 40.0% (37.0-45.0), erythrocytes  $4.47 \times 10^6/\text{mm}^3$  (4.00-5.40), MCV 89.6  $\text{m}^3$  (77 – 91), MCH 30.9 pg (24-30), MCHC 34.4 g/dL (32 – 36), RDW-CV 10.5% (11.0-16.0), RDW-SD 35.3 fL (37.0-49.0), MPV 9.8  $\text{m}^3$  (6.0-11.0), PDW 13.5 dl (11.0-18.0), PCT 0.160/ (0.15-0.50), lymphocytes 21.6% (0.00-100.0), monocytes 4.0 % (0.00-100.0), neutrophils 72.9% (0.00-100.0), eosinophils 0.2% (0.00- 100.0), basophils 1.3% (0.00-100.0).

The results of the chest x-ray examination read that the shape and size were within normal limits, there was an increase in pulmonary broncho vascular markings, the diaphragm and sinuses were within normal limits, and the impression that appeared was bronchitis.

The results of a complete blood count An. S indicates a low leukocyte count of  $3.46 \times 10^3/\text{mm}^3$  with a normal value of 4.5-13.5. Leukopenia is a low white blood cell count. Research by Rismala Dewi & Risa Imanillah, (2021) explained that low leukocyte values can be found in cases of infection, use of certain drugs, malignancy, and immune disorders in children, but it is also associated with an increased risk of infection, especially in children with red blood cell disorders. An. S also experienced an increase in MCH levels by 0.9 from the normal value of 24-30. MCH is an index of the average hemoglobin level in red blood cells, usually used to diagnose anemia, if the result is increased it usually occurs in patients with iron deficiency anemia (A. Anggraini, 2018). Result of RDW-CV 10.5% decreased from normal value 11.0-16.0, RDW-SD 35.3 fL also decreased from normal 37.0-49.0. The calculation of RDW (red cell distribution width) is related to iron deficiency. Microorganisms are easier to infect children who have iron deficiency due to damage to the body's immune mechanism in defense against infection attacks. Iron deficiency can be influenced by diet, economic factors, and the last education level of parents (Rachmayani, 2018).

Pharmacological therapy in respiratory diseases as a treatment and prevention of bronchoconstriction (narrowing of the airways), especially bronchioles due to contraction of the inflammatory reaction. Treatment is focused on widening the airway, relaxing the bronchiolar muscles or reducing inflammation (Tambayong, 2016).

The client received 42 ml/hour frequent infusion therapy, 1 respule ventolin nebulizer therapy (containing 2.5 mg salbutamol) + Sodium chloride/Sodium Chloride (NS) 1 ml / 8 hours (containing 0.9% NaCl), intravenous injection of ampicillin sulbactam 600 mg+drip Ns 100 ml/8 hours used up 60 minutes, oral medicine lasal exp 3x2.5 ml (every 5 ml contains 75 mg glyceryl gualakolate and 2 mg salbutamol), and Proceles 3x2.5 ml (every 5 ml contains 0.25 mg betamethasone and dexchlorpheniramine maleate 2 mg).

## 2. Nursing Diagnosis

Based on the results of the study conducted on February 16, 2022 at 13.00, subjective data obtained from the client's mother said An. S coughing continuously for  $\pm$  7 days accompanied by a runny nose, An. S added that he could not expel phlegm, while the objective data showed An. S cough, respiratory rate 34 x/minute, SpO<sub>2</sub> 98%, auscultation heard additional breath sounds crackles.

The results of data analysis obtained nursing problems that arise in the client, namely the ineffectiveness of airway clearance related to airway obstruction (increased production of secretions) characterized by additional breath sounds of crackles.

The diagnosis of ineffective airway clearance related to airway obstruction (increased production of secretions) characterized by additional breath sounds of crackles (Herdman, 2021). The authors chose this diagnosis because the triggers of inflammation in the bronchial wall include infection, allergies, or environmental stimuli that cause the inflammatory response, resulting in edema of the mucous membranes causing a decrease in ciliary function. The decrease in the function of the cilia makes the air not filtered properly so that mucus production occurs as a defense mechanism, because excessive mucus production and cannot be expelled causes a buildup of mucus in the airways resulting in ineffective airway clearance problems. If The problem of ineffective airway clearance is not resolved can lead to bronchospasm, emphysema, and atelectasis (Utama, 2018).

## 3. Nursing Intervention

Interventions designed to deal with the problem of ineffective airway clearance related to airway obstruction (increased production of secretions) characterized by additional breath sounds of crackles have goals and outcome criteria. within normal limits (20-30 x/minute),

increased ability to expel secretions, no additional breath sounds, and reduced coughing (Johnson, Marion & Sue Moorhed, 2021).

The action plan is adjusted to the Nursing Interventions Classification (NIC), (2021) with airway management sub-chapters (3140), namely: monitoring respiratory status, auscultating breath sounds, positioning the client semi-Fowler to maximize ventilation, teaching chest physiotherapy, teaching effective coughing exercises, collaboration in drug therapy, collaboration in nebulizer therapy (Bulechek, Gloria M. & Howard K. Butcher, 2021).

#### 4. Nursing Implementation

On February 16, 2022 at 14.30 WIB, what was done was to monitor respiratory status and auscultate the client's breath sounds with no visible response to the use of respiratory accessory muscles, the results of vital signs RR: 34 x/minute, S: 36,5°C, N: 116x/minute, SpO<sub>2</sub>: 98%, auscultation heard additional breath sounds crackles in both lung fields. At 14:45 WIB adjusts the client's position to semi-Fowler's position, and the client's response feels more comfortable and doesn't gasp in breathing. At 14.50 WIB teaches chest physiotherapy with the client's responsibility to be done by his mother, the client's mother follows the direction of chest physiotherapy well. At 15.05 WIB teaches effective coughing exercises with the result that clients practice effective coughing cooperatively but phlegm cannot be expelled.

At 16.00 WIB collaborated to provide intravenous injection therapy of ampicillin sulbactam 600 mg in drip Sodium Chloride/Sodium Chloride (Ns) 100 ml exhausted in 60 minutes with no allergic response to antibiotics. O'clock 16.05 collaborate on the administration of ventolin 1 respule nebulizer inhalation therapy + 1 ml Sodium Chloride / Sodium Chloride (Ns), the client's response said it was easier to breathe. 17.00 WIB collaborated with giving oral drugs, and the client responded that he was willing to take the medicine, the client received 2.5 ml of expectorant and 2.5 ml of proceles.

Nursing action on February 17, 2022 at 07.00 WIB what is done is to collaborate in giving oral drugs, the client responds that he is willing to take medicine, the client gets 2.5 ml of expectorant lasal and 2.5 ml of proceles. O'clock 07.10 WIB monitors the respiratory status and performs an auscultation examination of the client's breath sounds, data obtained from the client's mother said that she still coughs frequently, phlegm cannot come out, and no colds anymore. Results of vital signs An. S RR : 32 x/minute, S : 36.1°C, N: 129 x/minute, SpO<sub>2</sub> : 98%, auscultation heard additional breath sounds of crackles in both lung fields. At 07.55 WIB adjusts the client's position in semi-Fowler's position, the client's response feels more comfortable in a half-sitting

position with cancellation behind the back. At 08.00 WIB collaborated with intravenous injection therapy of ampicillin sulbactam 600 mg in drip Sodium Chloride/Sodium Chloride (Ns) 100 ml discharged in 60 minutes with no allergic response to antibiotics. At 08.05 WIB, they collaborated to provide inhalation therapy with 1 respule ventolin nebulizer + 1 ml Sodium Chloride/ Sodium Chloride (Ns) with the client's response said that after being steamed, it was easier to breathe. At 08.25 repeat effective coughing exercises, and sputum can be issued greenish.

Nursing action on February 17, 2022 at 07.00 WIB what is done is to collaborate in giving oral drugs, the client responds that he is willing to take medicine, the client gets 2.5 ml of expectorant lasal and 2.5 ml of proceles. O'clock 07.10 WIB monitors the respiratory status and auscultation checks the client's breath sounds, the data is still coughing often, sometimes not phlegm out. Objective data on vital signs RR : 30 x/minute, S : 36.3°C, N: 110 x/minute, SpO2 : 98%, auscultation did not hear additional breath sounds crackles. At 7.55 WIB, adjust the client's semi-Fowler position, the client's response feels more comfortable. At 08.00 WIB, they collaborated to provide intravenous injection therapy of ampicillin sulbactam 600 mg in drip Sodium Chloride/Sodium Chloride (Ns) 100 ml exhausted in 60 minutes with no allergic response to antibiotics. At 08.00 WIB collaborated with nebulizer inhalation therapy, and the client's response said that he was willing to be steamed again, the client received ventolin therapy 1 respule + 1 ml Sodium Chloride/ Sodium Chloride (Ns). At 08.25 repeat effective coughing exercises, client subjective data said they were willing to practice effective coughing, client objective data practiced well, thick greenish-yellow sputum could be issued.

Solving the problem of ineffective airway clearance in An. S has been implemented to the client according to the intervention. The first action is to monitor respiratory status, the result is a respiratory rate of 34 x/minute which means that there is tachypnea or rapid and shallow breathing, according to Marni's theory, (2016) on physical examination of respiratory disorders, acute respiratory infections will occur tachypnea. The respiratory rate increases to compensate for the obstruction in the airway (Sondakh et al., 2020). Rational breathing status is carried out with respiratory examination measures including breathing patterns, respiratory frequency, and respiratory sound disturbances to determine changes in ventilation (Yunanda & Adimayanti, 2021).

The second action is to perform auscultation of breath sounds rational. The act of auscultation of breath sounds can determine the comparison of breath sounds during inspiration and expiration to determine whether there is an obstruction in the airway (Yunanda &



Adimayanti, 2021). The results of the study found additional breath sounds in both lung fields, by Herdman's theory, (2018) that the problem of ineffective airway clearance has characteristic limitations, one of which is additional breath sounds. The theory based on Jannah, (2020), in clients with acute bronchitis there are additional sounds of crackles and also wheezing (wheezing) while the results of the assessment only sound crackles. Wheezing is a sound that is heard "ngiii .." during inspiration and expiration due to air trapped in a narrow gap such as edema in the bronchi, while low-pitched crackles such as intermittent vibrations due to secretions collected in the trachea or bronchi so that it interferes with the airway through which air passes (Yunanda & Adimayanti, 2021).

The third action changes the client's position into a semi-fowler. The procedure from the semi-Fowler position is to position the chest and head area higher than the hips and legs with a slope of 30-45 degrees by placing a pillow on the client's back (Wati et al., 2018). It is rational to change the semi-Fowler position by minimizing the work of the respiratory muscles, so there is a sense of relief when breathing and ventilation can be maximized so that there will be an increase in oxygen saturation by an increase in perfusion and more effective alveoli performance in the oxygen diffusion process (Yulia & Lestari, 2019).

The fourth act teaches chest physiotherapy. The rationale for chest physiotherapy in children is usually a cough accompanied by the formation of secretions that can rarely produce sputum, so it is necessary to take actions that can stimulate the secretion of secretions (Widagdo, 2016). Chest physiotherapy includes postural drainage, clapping, and vibration. The postural drainage technique used by putting the client to sleep according to the position of the blockage in the lung which aims to allow secretions to flow out of the location of the blocked lung is carried out for  $\pm$  5 minutes. Furthermore, the clapping technique or clapping to knock out the secretions sticking, then a vibration technique or chest compressions with slow vibrations. If there is a coughing stimulus, then an effective cough will occur so that the secretions can be removed (Maghfiroh et al., 2021). In the implementation of the second and third days of chest physiotherapy actions were not carried out again because the client felt embarrassed and began to be uncooperative, so for the convenience of the client, the authors did not continue the implementation of chest physiotherapy actions.

The fifth act teaches effective coughing exercises. The rationale is that this action is carried out with maximum ventilation and increased respiratory muscles can stimulate the movement of secretions so that they are easily expelled. Coughing is effective for preventing accumulated secretions, mobilizing secretions so that they are easy to

expel with minimal energy to prevent respiratory complications such as atelectasis and pneumonia (Wartini et al., 2021).

The sixth action is to collaborate in drug therapy. Drug therapy that the client runs through the oral route and intravenous injection. The client is also receiving frequent infusions of 42 ml/hour which are indicated for the treatment of blood and fluid loss.

Oral drug therapy prescribed is proceles syrup 3 x 2.5 ml. Proceles are used for allergies in the respiratory tract containing betamethasone (corticosteroid group) and dexchlorpheniramine maleate (antihistamines) (Amrin, 2019). Corticosteroids are used to reduce pain due to the inflammatory process while antihistamines can suppress allergic responses in the airways so that they can reduce allergy symptoms in children (Handayani, 2021). The antihistamine effect itself causes drowsiness or sedation and causes dry mouth (E. D. Anggraini et al., 2021).

Another oral drug therapy that is prescribed is a lasal expectorant drug 3 x 2.5 ml as an expectorant that can thin mucus and stimulate mucus secretion from the respiratory tract (Anwari et al., 2019). Lasal expectorant contains glyceryl gualacolate and salbutamol. Glyceryl gualacolate as an expectorant works by stimulating bronchial secretory cells as a productive cough therapy, while salbutamol is a  $\beta$ -adrenergic agonist bronchodilator for smooth muscle relaxation of bronchioles (Tambayong, 2016).

The client received antibiotic injection therapy that was prescribed due to a decrease in the number of leukocytes. Ampicillin + Sulbactam is a type of ampicillin of the penicillin group with a broad mechanism of action and is effective against gram-positive and gram-negative cocci that cause ARI, often prescribed to clients with bronchitis and pneumonia (Gunawan, S., 2016). The client received intravenous injection of ampicillin sulbactam 600 mg in 100 ml NS drip as an antibiotic. Ampicillin sulbactam is an antibiotic that is often used as empiric therapy (administration of antibiotics in a state of infection before bacterial culture or bacterial susceptibility test to antibiotics) in children. Ampicillin preparations were combined with sulbactam in a ratio of 2:1. Ampicillin sulbactam for IV infusion used contains 1000 mg of ampicillin and 500 grams of sulbactam. Ampicillin which is a semisynthetic aminopenicillin works by inhibiting the synthesis of bacterial cell walls when doubling, while sulbactam itself works by expanding the activity of ampicillin (Karyanti & Faisha, 2022).

The seventh action is to collaborate with nebulizer therapy. This action is carried out rationally and a nebulizer which is an inhalation therapy can change bronchodilator drugs (airway widening) from liquid to aerosol particle form so that it works quickly even with small doses (Wartini et al., 2021). The client received nebulizer therapy

with a prescription for ventolin 1 respule + Ns 1 ml / 8 hours which serves to overcome the narrowing of the respiratory tract walls. Ventolin containing 2.5 mg of salbutamol as  $\beta$ -adrenergic agonist bronchodilator. Bronchodilators have three groups:  $\beta$ -adrenergic agonists, anticholinergics, and xanthine derivatives.  $\beta$ -adrenergic receptors on  $\beta$ -adrenergic agonists respond to adrenergic stimulation (sympathetic nerve activity) by relaxing muscles so that ventilation can be maximized.  $\beta$ -adrenergic agonist drugs can be in the form of tablets, syrups, injections, and aerosols with aerosol dosage forms having the advantage of reacting quickly. The duration of action of this agent is 6-8 hours, so 3-4 doses are needed (Tambayong, 2016).

#### 5. Nursing Evaluation

Nursing evaluation on February 16, 2022 at 19.00 WIB, subjective data (S): the client's mother said her child had a cold again, still coughing up phlegm has not come out. Objective data (O) : the client's vital signs showed RR: 32 x/minute, S: 36,5°C, N: 116x/minute, SpO2: 99%, lung auscultation still heard crackles in both lung fields so that the assessment (A) ): the problem of ineffective airway clearance has not been resolved. Planning (P): continue the intervention to monitor respiratory status, auscultate breath sounds, position the client in semi-Fowler's position to maximize ventilation, teach effective coughing exercises, collaborate in drug therapy, and collaboration in giving nebulizer therapy.

Nursing evaluation on February 17, 2022 at 14.00 WIB, subjective data (S): the client's mother said her child was still coughing, had coughed in a trained way and phlegm came out yellowish green, no longer runny Objective data (O): Vital signs are obtained RR: 30 x/minute, S: 36.1°C N: 129 x/minute, SpO2: 98%, crackles are heard on auscultation so assessment (A): ineffective cleaning problem airway is partially resolved. Planning (P): continued intervention, namely monitoring respiratory status, auscultation of breath sounds, positioning the client in semi-Fowler's position to maximize ventilation, teaching effective coughing exercises, collaboration in drug therapy, collaboration in giving nebulizer therapy.

Nursing evaluation on February 18, 2022 at 14.00, subjective data (S): the client's mother said that now the cough is reduced, and phlegm can come out greenish yellow. Objective data (O): results of vital signs RR: 30 x/minute, S: 36.3°C, N: 110 x/minute, SpO2: 99%, no additional breath sounds are heard so assessment (A): the problem of ineffective airway clearance is resolved, planning (P): stop the intervention, the client is allowed to go home. Discharge planning: avoiding exposure to cigarette smoke, creating a clean environment, consuming warm water to soothe the throat, and if there is a recurrence, immediately check with health services.

## **Conclusion and Suggestions.**

Based on the documentation of nursing care carried out by the author from 16 to 18 February 2022 at An. S with a medical diagnosis of acute bronchitis in the Cendana ward, Harapan Hospital, Magelang City, the following conclusions can be drawn:

### **1. Assessment**

The study was carried out by the author on February 16, 2022, and obtained data on clients aged 8 years with a medical diagnosis of acute bronchitis. The main complaint felt by the client is cough. The client's mother said her son had a dry cough for  $\pm$  7 days accompanied by a cold. The results of vital signs were temperature 36.5°C, respiratory rate 34 x/minute, pulse 116 x/minute, SpO<sub>2</sub>: 98%, lung auscultation examination heard crackles in both lung fields.

### **2. Nursing Diagnosis**

Nursing problems that arise in An. S refers to the problem of ineffective airway clearance related to airway obstruction (increased production of secretions) characterized by additional breath sounds and crackles.

### **3. Nursing Plan**

The goals and outcome criteria after nursing actions have been carried out for 3 x 24 hours it is hoped that the problem of ineffective airway clearance can be resolved with the criteria for respiratory frequency results within normal limits (20-30 x / min), increased ability to excrete secretions, no additional breath sounds, reduced coughing.

The interventions that will be carried out are: to monitor respiratory status, auscultate breath sounds, position the client in a semi-Fowler's position to maximize ventilation, teach chest physiotherapy, teach effective coughing exercises, collaborate in drug therapy, and collaborate in nebulizer therapy.

### **4. Nursing implementation**

The implementation of nursing is carried out by the nursing plan set by the author. Nursing actions were carried out for three days. Nebulizer therapy was obtained by the client with a prescription for Ventolin 1 respule + Ns 1 ml / 8 hours. Antibiotics are also given with a prescription of 600 mg/drip NS 100 ml discharged in 60 minutes due to low leukocyte count laboratory results.

### **5. Evaluation**

The evaluation that was obtained after the nursing action was carried out was that the cough was reduced, could expel phlegm with an effective cough technique, phlegm was greenish-yellow, the respiratory frequency was in the normal range of 30x/minute, SpO<sub>2</sub>: 99%, no additional breath sounds were heard, resulting in the problem of ineffective airway clearance. breath is resolved, the follow-up plan stops the intervention and it is planned that the client is allowed to go home.

### **Suggestion**

In the preparation of scientific papers, the author has several suggestions, in particular:

#### 1. For Nursing Practitioners

Nursing practitioners who treat pediatric clients with bronchitis acute, in dealing with the problem of ineffective airway clearance should not only provide nebulizer therapy but also be supported with chest physiotherapy and effective coughing exercises so that when you go home from the hospital had no difficulty in expelling phlegm.

#### 2. For Other Institutions and Researchers

It is hoped that this scientific paper can be used as a reference others to be developed in the provision of nursing care in pediatric clients with bronchitis.

#### 3. For Hospitals

It is hoped that the hospital can improve care services nursing in children with bronchitis with therapeutic communication so that children are comfortable and not afraid when therapy is done.

#### 4. For Family

The role of the family, especially parents, is very important in maintaining and accompany the child and monitor the child's condition so that when the child is sick it does not getting worse or recurrence.

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