Journal of Pharmaceutical Research International

33(57B): 174-177, 2021; Article no.JPRI.76809
ISSN: 2456-9119
(Past name: British Journal of Pharmaceutical Research, Past ISSN: 2231-2919, NLM ID: 101631759)

A 2 Years Child Bronchopneumonia with Down Syndrome

Seema Yelne[1], Mayur Wanjari[2*], Hina Rodge[3], Sagar Alwadkar[2], Pratibha Wankhede[2] and Deeplata Mendhe[2]

[1]Shalinitai meghe College of Nursing, Datta Meghe Institute of Medical Sciences, Sawangi (M) Wardha, Maharashtra, India.
[2]Department of Community Health Nursing, Smt. Radhikabai Meghe Memorial College of Nursing, Datta Meghe Institute of Medical Sciences, Sawangi (M) Wardha, Maharashtra, India.
[3]Department of Child Health Nursing, Smt. Radhikabai Meghe Memorial College of Nursing, Datta Meghe Institute of Medical Sciences, Sawangi (M) Wardha, Maharashtra, India.

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/JPRI/2021/v33i57B34043

Open Peer Review History:
This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: https://www.sdiarticle5.com/review-history/76809

Case Study

Received 08 September 2021
Accepted 16 November 2021
Published 14 December 2021

ABSTRACT

Introduction: Pneumonia and respiratory infections impact infants and children with Down syndrome; pneumonia is a leading cause of mortality in adults with Down syndrome.
Case Presentation: A 2 years old child came to AVBRH hospital with a history of fever, cough and cold for 6 days. The patient was admitted to the pediatric ward for management. Suddenly patient started to breathlessness, increase in serum creatinine and acidotic breathing. The patient shifted to the pediatric intensive care unit.
Intervention: The treatment of patients was started immediately after admission. The patient's condition was dull after the examination and patient condition inspection doctors decide to intubate the patient for further management and recovery of the patient.
Conclusion: In this report, we mainly focus on expert medical management and excellent nursing care helped in managing the complicated case very nicely. The patient response was positive to conservative and nursing management. The patient was discharged without postoperative complications and satisfactory with recovery.

**Corresponding author: E-mail: Wanjari605@gmail.com;*

Keywords: Down syndrome; pneumonia; respiratory infections.

1. INTRODUCTION

Pneumonia and respiratory infections are an important consideration inindividuals with Down syndrome (DS) at the beginning and the end oflife. Early in life, infants with DS are at an increased risk for dysphagiaand silent aspiration, both of which are risk factors for and can present pneumonia [1]. In the first year of age, pneumoniais associated with dysphagia in children with DS [2]. Down syndrome, also known as trisomy 21, is a genetic condition (abnormality in the human genome) present from conception, caused by the presence of an extra 21 chromosome[1], resulting in a total of 47 chromosomes instead of 46. In the world, 1 in 800 children is born with this syndrome. The total number of people affected globally is estimated at around 40-50 million [3].

A child with Down syndrome suffers from hypotonia, excessive joint flexibility, an increased risk for obesity, short limbs, and neurological and language development delays. Approximately 40-50% of children with Down syndrome present congenital heart defects. Individually tailored physiotherapy and psychotherapy are needed to address the problems faced by children with Down syndrome [3].

To support appropriate neurological development, physical therapy plays an important role from the first months of life. Starting physiotherapy as early as possible will determine a larger degree of independence in the future. Besides acquiring a degree of independence in children with Down syndrome, kinetic physiotherapy also aims to prevent and correct the associated disabilities [3].

2. PATIENT AND OBSERVATION

2.1 Patient Information

A 2 years old child came to AVBRH hospital with a history of fever, cough and cold for 6 days. A narrated by a maternal uncle, the patient was alright before 6 days when they noticed the patient had fever with a high grade not associated with chills and rigors. The patient also had complaints of cough and cold associated with breathlessness. He was then taken to a private practitioner where he was admitted for 3 days and was later referred to AVBRH for further management. In AVBRH patient was admitted to pediatric war for management. Suddenly patient started to breathlessness, increase in serum creatinine andacidotic breathing. The patient shifted to the pediatric intensive care unit. The patient heart rate was 140/min, respiration 74/min and saturation 90%. Patient intubated with endotracheal tube no. 5 and fixed at 14cm after checking bilateral air entry. Post intubation vital is heart rate 130/min and saturation 100%. Undergone through physical examination, pathological investigation and radiological findings patient was diagnosed with bronchopneumonia with down syndrome. After 6 days, the extubated trial was given to the patient and the patient was extubated successfully. After being extubated patient was maintaining a vital sign on room air but after 2 days in the morning patient saturation suddenly down up to 70% of saturation continuously nebulization was given to the patient but saturation is not maintained after that repeat intubation was done on endotracheal tube no.4.5 and fixed at 13 cm after checking bilateral air entry. Patient on pressure-regulated volume control (PRVC) mode.

2.2 Clinical Finding

On physical examination, the patient's inspection was respiratory distress with nasal flaring, subcostal retraction, mongoloid facies are present.

On auscultation, the patient heart sound was a murmur, with rapid breathing and heart rate was an increase.

On neurological examination, the patient was conscious but irritable.

2.3 Therapeutic Intervention

- Inj. Vancomycin 200Mg in 20Ml NS Intravascular over 1 Hour every 6 Hourly. [200Mg/Kg/Dose]
- Inj. Adrenaline 0.6 Mg in 10Ml/Ns Intravascular 1Ml/Hour over 10 Hours. [0.1Mg/Kg/Min]
- Inj. Piptaz 1Gm, Intravenous, 8 Hourly [100Mg/Kg/Dose].
- Inj. Pan 10Mg, Intravenous, 24 Hourly.
- Inj. Hydrocort 75Mg, Intravenous, 24Hourly.
- Nebulization Duolin 12 Hourly.
- Nebulization Budecort 12 Hourly.

Table 1. Diagnostic assessment

Investigation	Patient Value
Blood Investigation	
Hemoglobin	8.9 gm/dL
Total RBC Count	4.48 cells/mcL
Total WBC Count	10000 per microliter of blood
Haematocrit	34.1%
Mean Corpuscular Hemoglobin Concentration (MCHC)	32.6 g/dL
Mean Corpuscular Volume (MCV)	57.6 1fl
Mean Corpuscular Hemoglobin (MCH)	17.5 picograms (pg)
Total Platelet Count	2.72 per microliter of blood
Monocytes	04
Granulocytes	75
Lymphocytes	20
Red Cell Distribution Width (RDW)	17.4
Eosinophils	01
Basophils	00

3. DISCUSSION

Down's syndrome is the most common chromosomal abnormality associated with several other phenotypes including learning disability, heart problems, leukemia in childhood as well as Alzheimer's disease [4]. The development of the Downs syndrome brain is associated with a reduction in neuronal number and abnormal neuronal differentiation. It has been previously reported that Down's syndrome neuron degenerates subsequently and undergo apoptosis. However, Busciglio J et al, reported that degeneration of these neurons can be prevented by treating them with free radical scavengers [5].

Bronchopneumonia is a type of pneumonia that causes inflammation in the alveoli. Someone with bronchopneumonia may have trouble breathing because their airways are constricted. Due to inflammation, their lungs may not get enough air. Symptoms of bronchopneumonia can be mild or severe [6].

Bronchopneumonia is a type of pneumonia, a condition that causes inflammation of the lungs. Symptoms can range from mild to severe and may include coughing, breathing difficulties, and fever. Causes include bacterial, viral, or fungal chest infections [7].

4. CONCLUSION

Pneumonia and respiratory infections are more prevalent and more severe in individuals with DS. Pneumonia is the leading cause of deathin DS. Given the possible complexity of the disease, this case study intends to raise disease awareness, highlight various therapies, and promote consultation with a doctor.

CONSENT

While preparing case reports for publication patient's informed consent has been taken from his guardian.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Akin K. Macrocytosis and leukopenia in Down's syndrome. Jama. 1988; 259(6):842.
2. Balarajan R, Donnan SP, Adelstein AM. Mortality and cause of death in Down's syndrome. Journal of Epidemiology & Community Health. 1982;36(2):127-9.
3. Rahi JS, Williams C, Bedford H, Elliman D. Screening and surveillance for ophthalmic disorders and visual deficits in children in the United Kingdom. British sJournal of Ophthalmology. 2001;85(3):257-60.
4. Mathew AK, Amaladas AS, Ahmed A, Hameed S. Clinical Presentation of Down's syndrome: A case report. The journal of medical research. 2017;3(3):107-9.
5. Busciglio J, Yankner BA. Apoptosis and increased generation of reactive oxygen

species in Down's syndrome neurons in vitro. Nature. 1995;378(6559):776-9.

6. Rouby JJ, Martin de Lassales E, Poete P. Nosocomial bronchopneumonia in the critically III. Am Rev Respir Dis. 1992;146: 1059-66.

7. Imsand M, Janssens JP, Auckenthaler R, Mojon P, Budtz-Jørgensen E. Bronchopneumonia and oral health in hospitalized older patients. A pilot studies. Gerodontology. 2002;19(2):66-72.

Peer-review history:
The peer review history for this paper can be accessed here:
https://www.sdiarticle5.com/review-history/76809