



# Biomarkers of pneumonia disease in under five children in “grill culture”<sup>☆</sup>

Sintha Lisa Purimahua<sup>a,b,\*</sup>, A. Arsunan Arsin<sup>c</sup>, Anwar Daud<sup>c</sup>, Ridwan M. Thaha<sup>c</sup>, Darmawangsa<sup>c</sup>, Agus Bintara Birawida<sup>c</sup>

<sup>a</sup> Graduated Student of Public Health, Hasanuddin University, Makassar 90245, Indonesia

<sup>b</sup> Faculty of Public Health, Nusa Cendana University, Kupang 85001, Indonesia

<sup>c</sup> Faculty of Public Health, Hasanuddin University, Makassar 90245, Indonesia

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## ABSTRACT

**Objective:** Based on data WHO in 2018, almost 802,200 cases of pneumonia occur in children. Indonesia data on Riskesdas in 2018, the increase in pneumonia with the prevalence of pneumonia based on the age group 1–4 years was 5.0. This study aims to obtain more information about biomarkers of the clinical assessment on patient cases and prevention management and then whether postpartum culture contributed to the increase in pneumonia.

**Methods:** The method used is a Literature review. Search for scientific articles collected through Scopus indexed journals through Science Direct, Pubmed, Elsevier, MDPI, WHO, Riskesdas, Google Scholar.

**Result:** From the literature articles we read, it shows that the incidence of pneumonia increases from year to year and is the leading cause of death. So it needs prevention from use biomarkers as markers and examined the association of Grill Culture with pneumonia in children under five.

**Conclusion:** The results of the biomarker examination are a marker of the case and prevention management will be carried out using existing cultural approaches.

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## Introduction

Mortality due to pneumonia in childhood is strongly associated with malnutrition, poverty, as well as inadequate access to health services. As a result of this, more than 98% of deaths caused by pneumonia in children occurred in 68 countries, of which progress in reducing under-five mortality was the most critical. The burden of pneumonia on families and health systems in low-resource countries exacerbates inequality; especially, children who are poor, hungry, and live in secluded areas most likely will be visited by this “forgotten killer”.<sup>1</sup>

Pneumonia still be a globally major cause of childhood mortality and morbidity. Accurate diagnosis and attribution of the cause of pneumonia are important for measuring the load of disease, implementing appropriate prevention and treatment strategies, and expand more effective interventions. Human adenovirus (HAdV) infection causes serious pneumonia in children, leading to significant morbidity and mortality rates. However, diagnostic biomarkers for HAdV-associated pneumonia are unavailable. Serum microRNAs (miRNAs/miRs) have been recently reported as diagnostic biomarkers for several diseases. The present study performed microRNA sequencing to identify potential biomarkers among serum exosomes miRNAs, with the aim of identifying

candidate biomarkers for the diagnosis of pneumonia in adenovirus-infected children.<sup>2,3</sup> Biomarkers are usually biological, chemical, or physical substances that can diagnose and examine various parts of the body such as blood and tissues. Biomarkers can show normal or pathological processes that occur in the body.<sup>4</sup>

Globally the proportion of childhood deaths that occur in the neonatal period is increasing. Since 1990 there has been a 47% reduction in deaths in children less than five years of age. Maternal mortality is higher in women living in rural areas and among poorer communities. Young adolescents face a higher risk of complications and death as a result of pregnancy than other women. Skilled care before, during, and after childbirth can save the lives of women and newborn babies. Only a small proportion of women in developing countries less than 30% receive adequate postpartum care. Culture is defined as passed down values, beliefs, attitudes, and behaviours, including knowledge, art, traditions, customs, abilities, and similar skills and habits that human beings gain as a member of society. The postpartum period lasts for approximately 6–8-weeks, starting from childbirth and ending with the restoration of the reproductive organs and other body systems to their pre-pregnancy state. In this period, significant physiological, social, and emotional changes occur in the woman. Thus, in many cultures, the postpartum period is considered as a sensitive period and various traditional practices are performed to protect the health of the mother and the baby.<sup>5,6</sup>

The WHO and Indian guidelines still recommend oral cotrimoxazole as an alternative to amoxicillin for outpatient treatment for CAP (community acquired pneumonia). All children aged 2 months to 5 years with WHO criteria for CAP were prospectively enrolled. Children on antibiotics or having received antibiotics within the previous 2 weeks.<sup>7,8</sup>

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\* Corresponding author.

E-mail addresses: [purimahuas119k@student.unhas.ac.id](mailto:purimahuas119k@student.unhas.ac.id), [pmc@agri.unhas.ac.id](mailto:pmc@agri.unhas.ac.id) (S.L. Purimahua).

## Methods

### Literature search procedure

This review literature source by accessing in the free journal database via Science Direct, Pubmed, Elsevier, MDPI, WHO, Riskesdas, Google Scholar. Collecting the latest information using keywords as biomarkers, toddlers, grill culture. After that to find the articles into Mendeley software to be synthesized and reviewed.

## Result

### Research selection

Find the journals in other sources as 76,211 articles 2013–2020 years about biomarkers pneumonia, matching the keywords required to be analyzed. In the next step, the articles are being strained by title, abstract, and keywords, obtained 173 articles were then revised founded on their full text. A number of 45 articles were removed because (most of them did not discuss the biomarker pneumonia under five children, environmental sanitation, and grill culture). Finally, from journal reading theme, that 21 choices articles near with my sources, with my inclusion criteria sources. We can see Fig. 1, Prisma flow diagram.

### Research characteristics

This section defines demographic data items from the 21 particular articles. The results of this study indicate that 21 studies recognized the biomarker pneumonia under five children in grill culture.

Based on the reading results of the article, it shows that the incidence of pneumonia increased from year to year and became the main cause of under five children died. So it needs prevention from the upstream sector to reduce. Childhood clinical pneumonia is caused by a combination of exposure to risk factors related to the host, the environment, and infection. To identify the former two categories of causal factors for the development of pneumonia at the community level.<sup>9</sup> In various societies and cultures, pregnancy and childbirth are socio-cultural events that have different meanings. This often translates into social expectations about what certain societies expect to do (or not do) during a woman's pregnancy, birth, and/or postnatal period. This paper reports a study exploring beliefs around childbirth in Nepal, a low-income country with a largely Hindu population. The paper then sets these findings in the context of the wider global literature around issues such as periods where women are viewed as polluted (or dirty even) after childbirth. This paper explores social and cultural practices that have health implications in the childbirth and postnatal periods of rural Nepali women; and places it in the context of the global literature on such practices. The study explores the extent to which such practices, especially in low-income countries, are part of the cultural adaptation of becoming a mother and identifies why women might not access services, particularly PNC.<sup>10</sup> Depression and have greater barriers to accessing treatment are more likely to occur in mothers living in poverty. Numerous studies have demonstrated many factors associated with PPD including obstetric history, biochemical genetic, and other social stressors: age; socioeconomic; culture; education; negative life events. To prevent, early treatment of PPD, increase earnings, and improve the quality of life for women.<sup>11</sup> This literature describes the incidence of pneumonia in relation to the culture of postpartum mothers in their treatment practices.

## Discussion

Pneumonia remains the leading cause of death in children outside the neonatal period, despite advances in prevention and management. Over the last 20 years, there has been a substantial decrease in the incidence of childhood pneumonia and pneumonia-associated mortality.<sup>4</sup> Pneumonia is the biggest cause of deaths in young children in developing countries, but early diagnosis and intervention can effectively reduce mortality. We aimed to assess the diagnostic value of clinical signs and symptoms to identify radiological pneumonia in children younger than 5 years and to review the accuracy of WHO criteria for a diagnosis of clinical pneumonia. WHO-approved signs age-related fast breathing (six studies; pooled sensitivity 0.62, 95% CI 0.26–0.89; specificity 0.59, 0.29–0.84) and lower chest wall indrawing showed poor diagnostic performance.<sup>12</sup>

In general, biomarkers are biological, chemical, or physical substances that can be detected and measured in various parts of the body, such as blood and tissues. Biomarkers can show normal or pathological processes that occur in the body. Biomarkers can be in the form of certain cells, molecules, genes, gene products, enzymes, or hormones. Biomarkers can be used for diagnostic purposes, disease processes, disease degree, disease prognosis (cancer biomarkers), and biomarkers to monitor clinical response to intervention.<sup>13</sup>

The results of research in Cambodian villages, for traditional beliefs, some postpartum women have modern medicine during

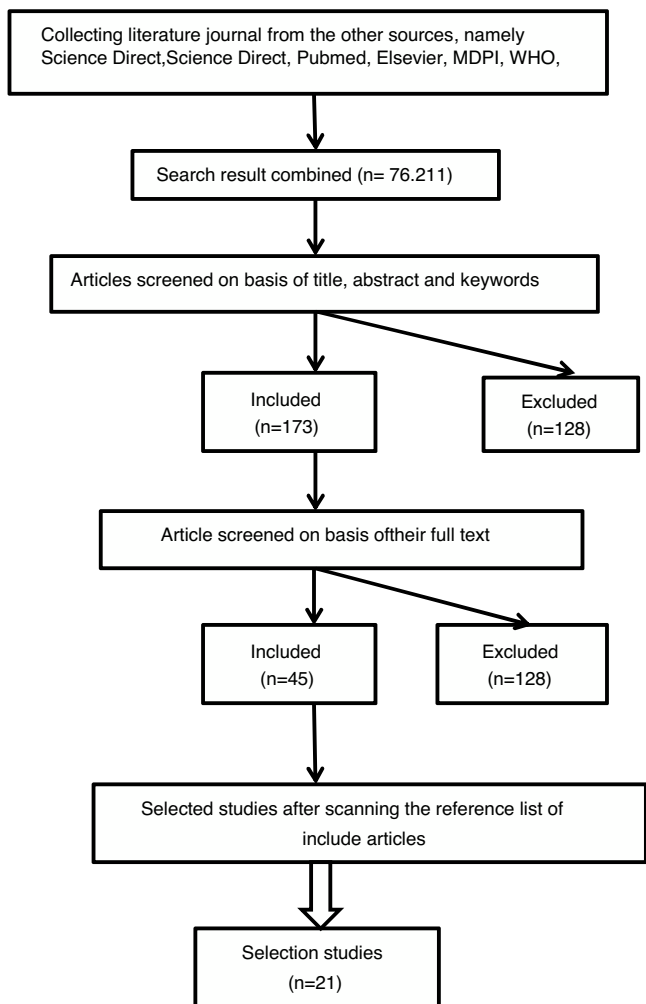


Fig. 1. Prisma flow diagram.

childbirth and then use traditional medicine right away. Like drinking traditional medicine consisting of plants from leaves, bark, and roots. One explanation for this is that the mother doesn't know what to care about, so will listen more to the older person, the mother. However, in the next pregnancy, she will have more confidence, knowledge, and experience so she will move in her own way towards modern medicine even though some traditional medicines may continue to be used. They still use traditional medicine to maintain this habit.<sup>5</sup>

The results of the study in Nepal, a country where income levels are low, pregnancy, and childbirth are socio-cultural events that have different meanings in different societies and cultures. This often translates into social expectations of what certain societies expect (or should not do) during pregnancy, birth, and/or the postnatal period. The study explores beliefs around childbirth, then establishes issues such as the period in which women were seen as polluted (or even dirty) after childbirth.<sup>10</sup>

Postpartum women in addition to maintaining the health of their babies also maintain their reproductive health. The role of culture in maintaining postpartum sexual abstinence in women in Swazi. The literature shows that periods of abstinence and resumption of sexual activity are influenced by many factors and variations from existing cultures.<sup>14,15</sup>

The culture of the Timorese people in the Timor Tengah Selatan district of NTT province is that mothers are required to give birth in a roundhouse (traditional house) and receive 40 days of care by a dukun or someone who is believed to have experience in caring for the mother. Treatment for postpartum mothers is usually in the form of baking a fire. This cultural event will adversely affect the mother and the baby who will roast the body over medium heat and also affect the faster healing of wounds after childbirth.

## Conclusion

From the references we read, it was explained that the incidence of pneumonia is very risk disease in vulnerable group of infants and toddlers, so early prevention must be carried out. Pneumonia treatment intervention by examining biomarkers to determine the cause of pneumonia. The results of the biomarker examination are

a marker of the case and prevention management will be carried out using existing cultural approaches.

## Conflicts of interest

The authors declare no conflict of interest.

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