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THE ROLE OF IL-10 IN EARLY AGE CHILDREN WITH SEVERE PNEUMONIA AND COMPLICATIONS

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✓ Resume

Severe pneumonia is a major cause of illness and death in young children. Interleukin-10 (IL-10) is a cytokine that regulates the immune response to infection. However, its role in severe pneumonia with complications is not well understood. A review was conducted to evaluate the role of IL-10 in early age children with severe pneumonia and complications. Elevated levels of IL-10 have been associated with a more severe clinical course and increased risk of complications in children with severe pneumonia caused by various pathogens. IL-10 may play a role in the pathogenesis of severe pneumonia with complications in early age children. Further studies are needed to determine its potential as a biomarker and therapeutic target.

Keywords: IL-10, pneumonia, children, complication, pathogenesis.

IL-10 NING OG'IR PNEVMONIYA VA UNING ASORATLARI BO'LGAN ERTA YOSHLIK BOLALARDAGI ROLI

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✓ Rezyume

Og'ir pnevmoniya yosh bolalarda kasallik va o'limning asosiy sababidir. Interleykin-10 (IL-10) infeksiyaga qarshi immunitet reaksiyasini tartibga soluvchi sitokindir. Biroq, uning asoratlatgan og'ir pnevmoniya va uning asoratlaridagi roli yaxshi o'rganilmagan. Og'ir pnevmoniya va asoratlari bo'lgan erta yoshdagi bolalarda IL-10 ning rolini baholash uchun tadqiqot o'tkazildi. IL-10 ning yuqori darajalari og'irroq klinik kurs va turli patogenlar keltirib chiqaradigan og'ir pnevmoniya bilan og'rigan bolalarda asoratlar xavfi ortishi bilan bog'liq. IL-10 erta yoshdagi bolalarda asoratlatlangan og'ir pnevmoniya patogenezida rol o'ynashi mumkin. Uning biomarker va terapevtik maqsad sifatida potensialini aniqlash uchun qo'shimcha tadqiqotlar talab etiladi.

Kalit so'zlar: IL-10, pnevmoniya, bolalar, asorat, patogenez.

РОЛЬ ИЛ-10 У ДЕТЕЙ РАННЕГО ВОЗРАСТА С ТЯЖЕЛОЙ ПНЕВМОНИЕЙ И ОСЛОЖНЕНИЯМИ

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✓ *Резюме*

Тяжелая пневмония является основной причиной заболеваемости и смерти детей раннего возраста. Интерлейкин-10 (ИЛ-10) представляет собой цитокин, который регулирует иммунный ответ на инфекцию. Однако его роль при тяжелой пневмонии с осложнениями недостаточно изучена. Был проведен обзор для оценки роли ИЛ-10 у детей раннего возраста с тяжелой пневмонией и осложнениями. Повышенные уровни ИЛ-10 связаны с более тяжелым течением и повышенным риском осложнений у детей с тяжелой пневмонией, вызванной различными возбудителями. ИЛ-10 может играть роль в патогенезе тяжелой пневмонии с осложнениями у детей раннего возраста. Необходимы дальнейшие исследования для определения его потенциала в качестве биомаркера и терапевтической мишени.

Ключевые слова: Ил-10, пневмония, дети, осложнение, патогенез.

Introduction

Pneumonia is a common respiratory infection that affects individuals of all ages. However, it is particularly dangerous in young children, especially those under five years of age. Severe pneumonia with complications can be life-threatening, and identifying biomarkers that can predict disease severity and outcomes is crucial for effective management of the condition. Interleukin-10 (IL-10) is an anti-inflammatory cytokine that has been shown to play a role in the immune response to pneumonia [1]. This article will review recent studies that have investigated the level of IL-10 in early age children with severe pneumonia and complications.

IL-10 and its role in pneumonia: IL-10 is a cytokine produced by immune cells, including T cells and macrophages. It has anti-inflammatory properties and is known to suppress the immune response. IL-10 plays a critical role in regulating the immune response to bacterial and viral infections, including pneumonia. It is produced in response to bacterial products such as lipopolysaccharide (LPS) and has been shown to modulate the pro-inflammatory cytokine response that occurs during pneumonia [2].

Studies on IL-10 in early age children with severe pneumonia: Several studies have investigated the level of IL-10 in early age children with severe pneumonia and complications. One study found that the level of IL-10 in children with severe pneumonia was significantly higher than in healthy controls [3]. The study also found that the level of IL-10 was higher in children with severe pneumonia who had complications, such as pleural effusion, compared to those without complications [3].

Another study investigated the level of IL-10 in children with severe pneumonia caused by *Streptococcus pneumoniae*. The study found that the level of IL-10 was significantly higher in children with severe pneumonia compared to those with mild pneumonia. The study also found that the level of IL-10 was higher in children with severe pneumonia who had complications, such as empyema, compared to those without complications [4].

A third study investigated the level of IL-10 in children with severe pneumonia caused by respiratory syncytial virus (RSV). The study found that the level of IL-10 was significantly higher in children with severe pneumonia compared to those with mild pneumonia. The study also found that the level of IL-10 was higher in children with severe pneumonia who had complications, such as bronchiolitis obliterans, compared to those without complications [5].

Discussion: The studies reviewed in this article suggest that IL-10 may play a role in the pathogenesis of severe pneumonia and complications in early age children. The higher levels of IL-10 observed in children with severe pneumonia and complications may be indicative of an excessive anti-inflammatory response that may contribute to disease severity. However, more research is needed to fully understand the role of IL-10 in pneumonia and its potential as a biomarker for disease severity and outcomes.

Conclusion: In conclusion, IL-10 is an anti-inflammatory cytokine that has been shown to play a role in the immune response to pneumonia. Studies have found that the level of IL-10 is significantly higher in early age children with severe pneumonia and complications, suggesting a potential role as a biomarker for disease severity and outcomes. However, further research is needed to fully understand the role of IL-10 in pneumonia and its clinical implications.

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