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POINT OF VIEW

The Covid-19 pandemic, deviations in nutritional status and pediatrics

A pandemia do COVID-19, desvios do estado nutricional e pediatria

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Keywords:
Pandemics,
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Coronavirus Infections.

Abstract

The highest probability of dying from coronavirus infection is among the elderly with comorbidities. This paper describes the high frequency of nutritional deviations in children and their associations with immunological changes, diabetes, high blood pressure and other changes, which compromise health and the response to this and other disease-causing agents, in an acute or chronic way, at any stage of life. We conclude that investment in pediatric care can contribute to a better public health scenario, also in times of pandemic.

Palavras-chave:
Pandemias,
Pediatria,
Estado Nutricional,
Infecções por Coronavírus.

Resumo

A maior probabilidade de morrer em decorrência da infecção pelo coronavírus está entre os idosos com comorbidades. O artigo descreve a elevada frequência dos desvios nutricionais ainda na infância e suas associações com alterações imunológicas, diabetes, hipertensão arterial e demais alterações, as quais comprometem a saúde e a resposta a este e a outros agentes agressores, de forma aguda ou crônica, em qualquer fase da vida. Conclui-se que o investimento em cuidados ainda na infância pode contribuir para um melhor cenário da saúde pública, também em momentos de pandemia.

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INTRODUCTION

The Covid-19 pandemic that currently mobilizes the world appeared in December 2019 in the city of Wuhan (China) and is caused by a beta-coronavirus related to the Severe Acute Respiratory Syndrome (SARS) virus. Epidemiological studies show the high contagion power of Covid-19 in all age groups in the various countries affected[1]. Data from the World Health Organization reveals an increasing mortality rate, with 1,133,758 cases and 62,784 confirmed deaths.[2] There is a greater probability of death among individuals over 60 years of age, with a directly proportional increase for the higher age groups. Deaths are often associated with pre-existing comorbidities, such as heart disease, diabetes, chronic respiratory diseases, high blood pressure, cancer and others.[3]

Nutritional status and viral infections

Protein-energy deficiency is often found in different proportions according to the region studied, causing deaths in children and contributing to chronic deficiencies in adults, in addition to the high socioeconomic cost caused by them.[4] Individuals with protein-energy malnutrition present immunological changes of varying degrees, including adverse effects such as asthma in adulthood due to malnutrition in early life.[5]

There are still no scientific studies associating morbidity and mortality due to COVID-19 infection to deviations in nutritional status; however, obese people often have comorbidities that are among the risk factors for severe Covid-19 infection, a situation in which the prevalence of arterial hypertension and diabetes are equal to 20% and 30%, respectively.[6,7] In addition, nutritional status deficits have already been detected as independent risk factors for other diseases caused by viruses.[8]

Estimates indicate that overweight and obesity contribute annually to about 4 million deaths worldwide (7.1% of total deaths).[9] In addition to the recognized comorbidities related to it, such as diabetes, high blood pressure and other cardiovascular diseases, obesity also leads to a reduction in total lung capacity (decreased functional residual capacity and of the expiratory residual volume), increased bronchial responsiveness (due to the loss of broncho-protective effect of deep inspiration)[10], decreased diaphragm incursion and elevated inflammatory cytokines,[11] making the respiratory system highly vulnerable to virus attack. Obesity has also been associated with a decrease in immune response to certain pathogens.[12] Without adequate interventions, changes in nutritional status may remain during adulthood, which reinforces the importance of regular pediatric follow-up with adequate and early guidance, especially during the first 1,000 days of life (period of nutritional and metabolic programming), until the end of childhood, a time when habits and health practices will be established that will last for a lifetime.[13] During follow-up, so that there is success in the projections of human survival around a century, vigilance and guidelines for maintaining an adequate nutritional status are essential.

Coronavirus pandemic and child healthcare projects on the health of the elderly

The Covid-19 pandemic period reinforces the importance of care by professionals working in the area of child health care, especially valuing the biopsychosocial aspects and the practice of childcare with surveillance of the nutritional status in order to maintain health and interventions when necessary, contributing for the child to become an adult and later a long-living elderly, but in addition, living to the fullest, being able to develop favorable immune responses during the acute and unexpected adverse stimuli, in addition to the chronic ones that may happen.

Since the Covid-19 infection is more severe in the elderly and associated with specific risk factors, many of them associated with obesity, these factors are contributing to the establishment of chaos in different ways in public health[13,14] and perhaps they could have been previously controlled. Epidemiological data referring to this pandemic reiterates the inherent need to take care of individuals even in childhood, considering their biopsychosocial aspects, including epigenetic factors, with the perception and sensitivity that the actions taken during that period may reflect on health and individual and collective longevity. It is very important that each healthcare professional, including the pediatrician, fulfills his/her social role; thus, making a difference and contributing to the improvement in health indicators.

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