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Review Article

The Relationship Between Smartphone Exposure And Gastroesophageal Reflux In Infancy.

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Abstract

The incidence of gastroesophageal reflux disease (GERD) in infants seems to be increasing. This article discusses the hypothesis that maternal smartphone use during pregnancy may contribute to this disease. The hypothesis is supported by epidemiological observations of higher GERD prevalence in infants from urban and higher socioeconomic backgrounds compared to rural populations, and by experimental evidence suggesting that electromagnetic fields influence lower esophageal sphincter (LES) physiology. Further multi-center studies are warranted to investigate this potential environmental risk factor in the etiopathogenesis of infants GERD.

Keywords : *Smartphone, Gastroesophageal reflux, GERD, infant, pregnancy.*

INTRODUCTION

Gastroesophageal reflux disease (GERD) represents a significant clinical problem during infancy, often resulting in feeding difficulties, and impaired growth. The apparent rise in clinically significant GERD in recent decades raises questions about underlying contributing factors.

Having worked as a pediatrician for over 35 years, I've observed a striking rise in cases of gastroesophageal reflux disease (GERD) among young infants in recent decades. This noticeable increase has prompted us to explore its underlying causes. I've faced that many affected infants come from urban areas, particularly families with higher socioeconomic status, while cases from rural regions are relatively rare. This disparity led me to explore the lifestyle differences between urban and rural populations.

HYPOTHESIZED CONTRIBUTING FACTORS

The contrast in GERD prevalence between urban and rural populations may reflect differing exposures during pregnancy and early life. Women in rural communities in developing countries generally have less contact with modern technologies, including smartphones, compared to those in urban settings, where smartphone use is one of the social imperatives of their life.

DISCUSSION

Experimental research indicates that electromagnetic fields may affect gastrointestinal physiology. A recent study demonstrated that electrical field stimulation alters the function of clasp and sling fibers of the lower esophageal sphincter (LES), which are critical for maintaining the anti-reflux function (1). Although preliminary, these findings provide a plausible biological mechanism through which electromagnetic exposure could influence esophageal function.

The proposed hypothesis offers a potential explanation for the rising prevalence of GERD in infants, particularly in urban settings. While current evidence remains indirect and primarily theoretical, the convergence of epidemiological patterns and experimental findings supports further exploration of this association.

If confirmed, this hypothesis would underscore the importance of assessing environmental and technological exposures during pregnancy as modifiable risk factors. Multicenter studies incorporating maternal lifestyle data, technological

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exposure assessments, and infant health outcomes are needed to clarify whether smartphone use during pregnancy is associated with an increased risk of infant GERD.

CONCLUSION

It is hypothesized that maternal exposure to electromagnetic fields associated with smartphone use during pregnancy could interfere with the development or postnatal dysfunction of the infant's LES, thereby predisposing to GERD.

Conflict of Interest: The authors declare no conflict of interest related to this study.
Ethics declaration: not applicable.
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