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The Potential Effects of Hormonal Therapy and Stress on the Oral Health of the Transitioning Population

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Abstract

Problem: In terms of healthcare, the transgender population is underserved. Unfortunately, these individuals often experience stress and fear discrimination when seeking health care. These factors preventing them from seeking care, in addition to hormone therapy taken during the transition process, could have severe impacts on their dental health. The purpose of this study is to establish a link between the hormone therapy used during gender transitioning and the effect on oral health. While there is a correlation between hormone replacement therapy and clinical evidence that sex hormones can impact on periodontal tissues, few studies have linked this knowledge to the healthcare needs of the transitioning population.

Methods: Research was obtained from PubMed, the database of Dental and Oral Sciences Sources, Google Scholar, and LGBTQ+ databases. Recent studies and literature reviews were analyzed to determine if there was a correlation between hormone therapy and the health of the oral cavity. All sources found were published within five years.

Major Findings: Many studies have revealed sex hormones effect the oral cavity. If it can happen to those that are taking sex hormone then there has to be a correlation to those who are transitioning taking the same hormone. Few studies have been conducted proving this correlation; this topic deserves more research and investigation.

Conclusions: There is a clinical correlation between hormone replacement therapy and the effects on the oral cavity. Therefore, there is a possible correlation to the transgender population that is taking hormones and periodontal disease. As this population continues to grow, and more individuals identify as a part of the community, it is important to continue to research this topic.

Introduction

1.4 million people in the United States identify as transgender.² This population experiences a wide disparity in their access to health care, particularly dental care. Estrogen, progesterone, and testosterone are the three sex hormones used during transitions that affect facial hair development, vocal changes, muscle tone, body fat development and retention, and could even influence the oral cavity.⁶ According to *The Influence of Female Sex Hormones on the Periodontium*, sex hormones “may alter immunologic factors and responses and changes in these hormone levels can be known to cause inflammation.”⁷ Inflammation in the oral cavity may make it more difficult to sustain sufficient oral hygiene to prevent gingivitis that may progress to periodontitis, while altered immune responses may make it more difficult to fight off the pathogenic bacteria in the oral cavity that cause periodontal disease, putting a transgender patient at an increased risk for infection.

Clinical research has shown that a deficiency of estrogen is directly linked to the development of osteoporosis and loss of alveolar bone. This bone loss leads to clinical attachment loss, thus implicating periodontal disease.⁷

To examine the effect of testosterone on bone metabolism, the bone remodeling marker osteoprotegerin, OPG, levels can be analyzed. It was found that the OPG action associated with testosterone use reduces bone mineral density; reduction in bone mineral density is also observed during periodontal disease progression.⁹ This evidence implicates that androgen hormones could have a potential impact on the health of the periodontium and the progression of periodontal disease in those undergoing a female to male transition.

While there is still more research that must be done on the effect of sex hormones on the periodontium and oral cavity of those transitioning, previous research and knowledge does suggest a clinical correlation between testosterone, estrogen, and progesterone and periodontitis.

Discussion

Sex steroid hormones are believed to play an important role in the maintenance of skeletal integrity, including the integrity of the alveolar bone and have been linked with periodontal pathogenesis.⁹ Research and clinical evidence has shown that estrogen, in particular, has a direct effect on the periodontium.⁹ Poor oral hygiene in combination with hormone-induced inflammation may also contribute to an increased risk for periodontitis. Testosterone has also been associated with bone metabolism playing a role in the maintenance of bone mass.

Deficient levels of estrogen in transgender men that could potentially lead to osteopenia.¹⁰ The alveolar bone of transgender patients be included in this examination to determine whether any bone loss within the jaw is occurring, which could lead to clinical attachment loss and periodontitis. Another factor that could impact the periodontium is the higher risk for diabetes due to hormonal changes that MTF and FTM transgenders experience; the mutual correlation between diabetes and periodontitis can exacerbate both conditions. The severity of chronic periodontal disease can complicate metabolic control, which can impact diabetes. Patients who are diabetic are more likely to present with chronic periodontitis that may worsen over time if their A_{1c} is not well controlled.¹⁰

Previous studies have also identified that stress can impact the periodontium by disrupting “homeostasis and the immune system.”¹³ A study performed by the *SRM Journal of Dental Sciences* assessed the direct effects that stress can have on the periodontium. This study found that long-term psychosocial stress can lead to emotional disabilities that could cause an individual to neglect their oral hygiene, which devolves into the development of periodontal disease.¹³

According to a self-reported cross-sectional study recorded among individuals who identify as transgender in the United States, 33.1% of the population stated experiencing discrimination on one or multiple occasions in their lifetime.¹⁵ The discrimination that they face not only causes anxiety, but it often causes the individual to question their gender identity and expression.¹⁵ Transgender individuals also state that they are “very much” or extremely fearful of experiencing maltreatment in a dental office, while 85.5% of individuals surveyed that they had experienced maltreatment from an oral health provider in the past, as adolescents of a sexual minority are more vulnerable to experiencing adversity.¹⁶

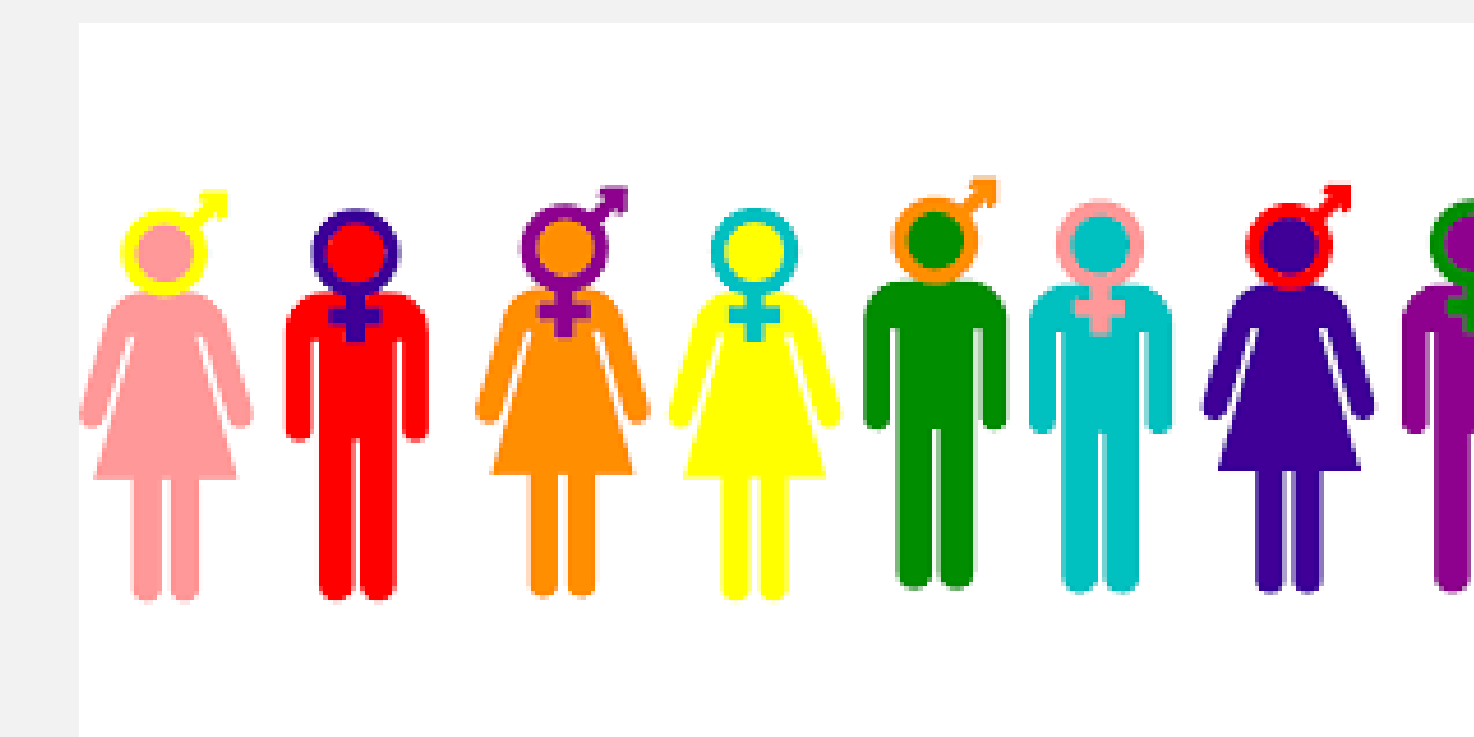
To ensure that the transgender population receives the best possible oral care, dental health providers must be accommodating to stress and fear, while also keeping track of their health and periodontal status throughout their transition. Providing routine dental preventive care throughout their transition process will reduce the risk of periodontitis development.

Methods and Materials

This review of literature was conducted using the following databases as resources: PubMed, Google Scholar, Dental and Oral Sciences Sources (DOSS), and LGBTQ+ database sources. The search terms, also known as “MESH” terms, used were hormone therapy and replacement, periodontitis, oral health, dental health, transgender, and transitioning. All articles included in this review were published after 2015.

Conclusion

There is a clinical correlation between hormone replacement therapy and sex hormones and their effects on the oral cavity. Therefore, there is a possible correlation to the transgender population that is taking hormones, a higher prevalence of diabetes in this population, and the stress levels they experience. As this population continues to grow, and more individuals identify as a part of the community, it is important to continue to research this topic



Future Research

- The transgender population is continually growing, therefore, there needs to be more research on the effect of hormonal therapy and stress on the oral health of this population.
- More longitudinal studies investigating the links between hormone therapy and periodontitis progression need to be performed, investigating the effects of hormonal therapy and the progression of the disease
- Future studies will aid health care professionals in providing the best possible care for this population and identify their health care needs

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