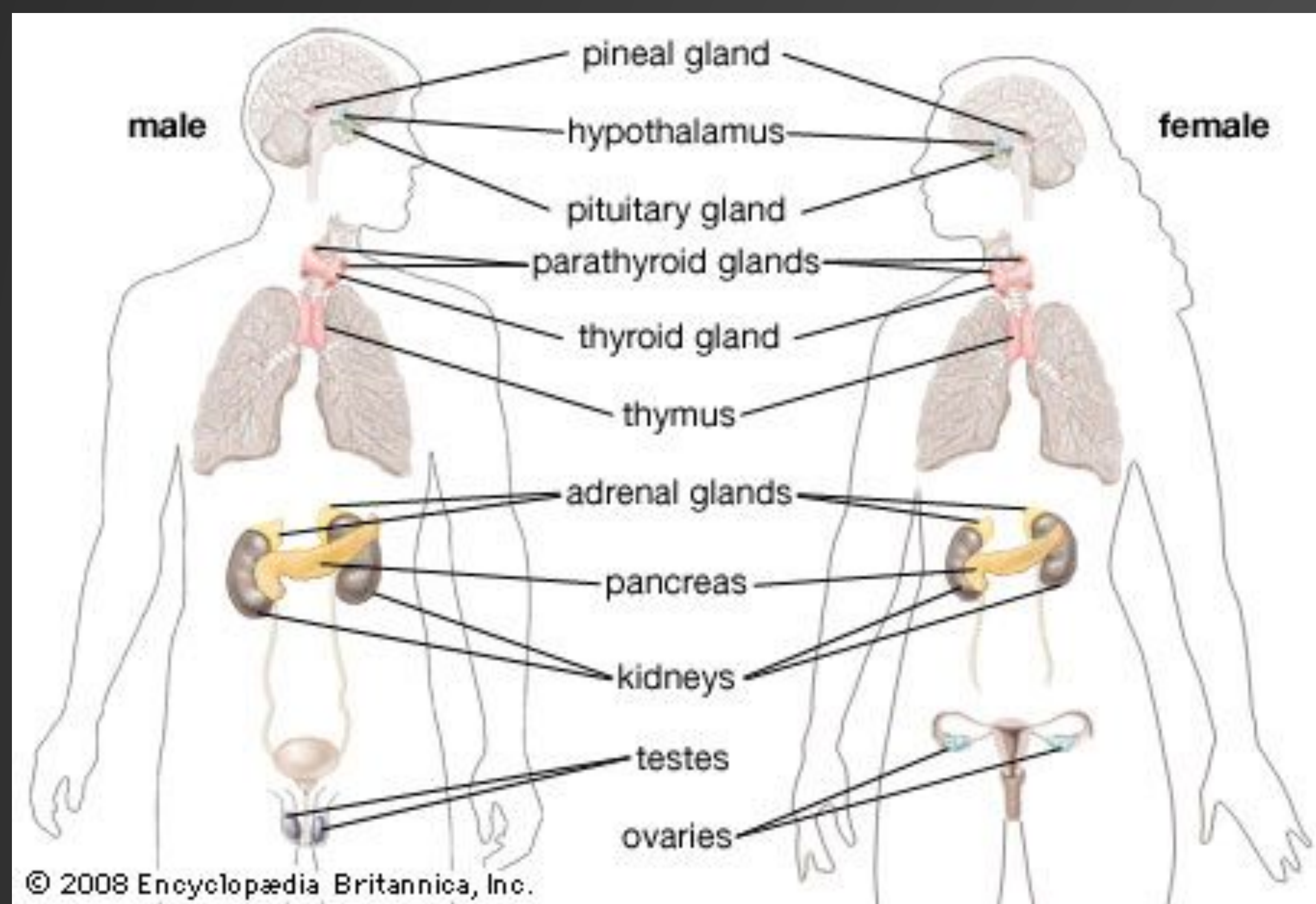




Development, Diagnosis, Treatment, and Prevention of Primary Hypophysitis

Introduction

- The pituitary gland is the master gland of the body that causes chain reactions within the endocrine system. Its job is to maintain homeostasis within the body. With autoimmune diseases like hypophysitis on the rise and disrupting homeostasis, it is important to understand the pituitary's role in the body and how hypophysitis presents itself so that a diagnosis can be made and treatment and prevention can begin.



Background and Literature Review

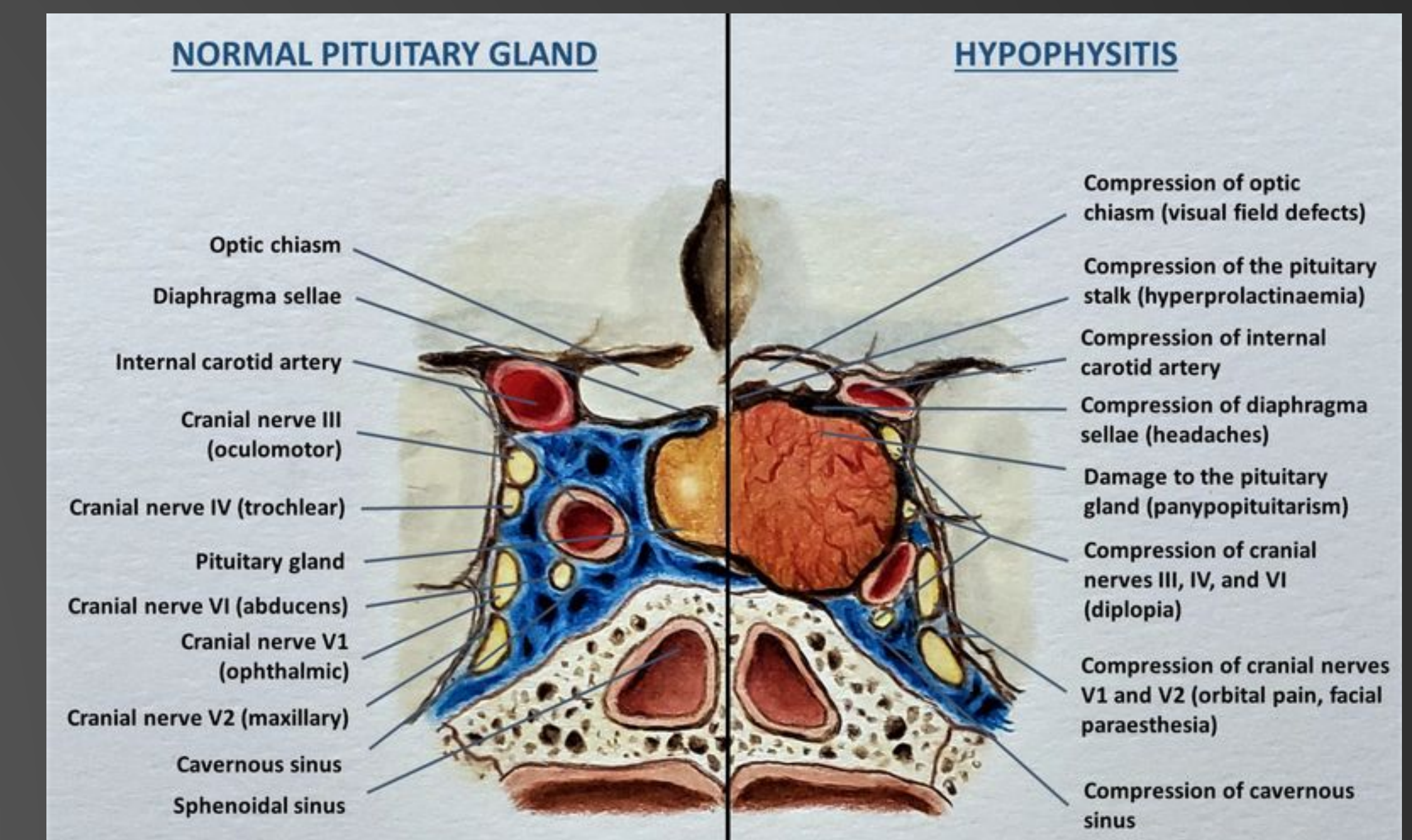
- Primary hypophysitis is a broad term for an autoimmune disease within the pituitary gland. Lymphocytic hypophysitis is the most common disease (Gubbi et al, 2018).
- In 1962, lymphocytic hypophysitis was first discovered through an autopsy of a postpartum woman. Lymphoplasmacytic debris was found in her pituitary gland (Bellstella et al, 2016).
- The most common symptoms found in a study by Zhu et al (2019) were diabetes insipidus, vision changes, headaches, and anterior pituitary deficiency.
- The pituitary gland has an inflammatory response to the infiltration of T cells and B cells. The localization of dendritic cells with T cells increased interferon- γ and interleukin-17 levels (Lin et al, 2017).
- Corticosteroids have often been used to treat lymphocytic hypophysitis, but in a study by Sawachika et al (2018), they found that mycophenolate mofetil effectively treated a patient who had a relapse of this disease.

Expected Results

- Although there is room for improvement on ways to diagnose, treat, and prevent hypophysitis, studies show that some methods can be effective.
- Because hypophysitis is classified as an autoimmune disease, one can expect to find T cells, B cells, cytokines, and other white blood cell components affecting the pituitary gland and the surrounding tissue.
- Since the pituitary is a gland that secretes several different hormones to other endocrine tissues, one may also find insufficient hormone levels as well as impaired endocrine organs.
- The article by Gubbi et al. (2018) notes a lack of studies to determine if certain geographic areas or ethnicities are affected more than others.

Research Question

- How does hypophysitis present itself as a disease?
- What diagnosis procedures, treatment options, and prevention methods are available and effective?



Method

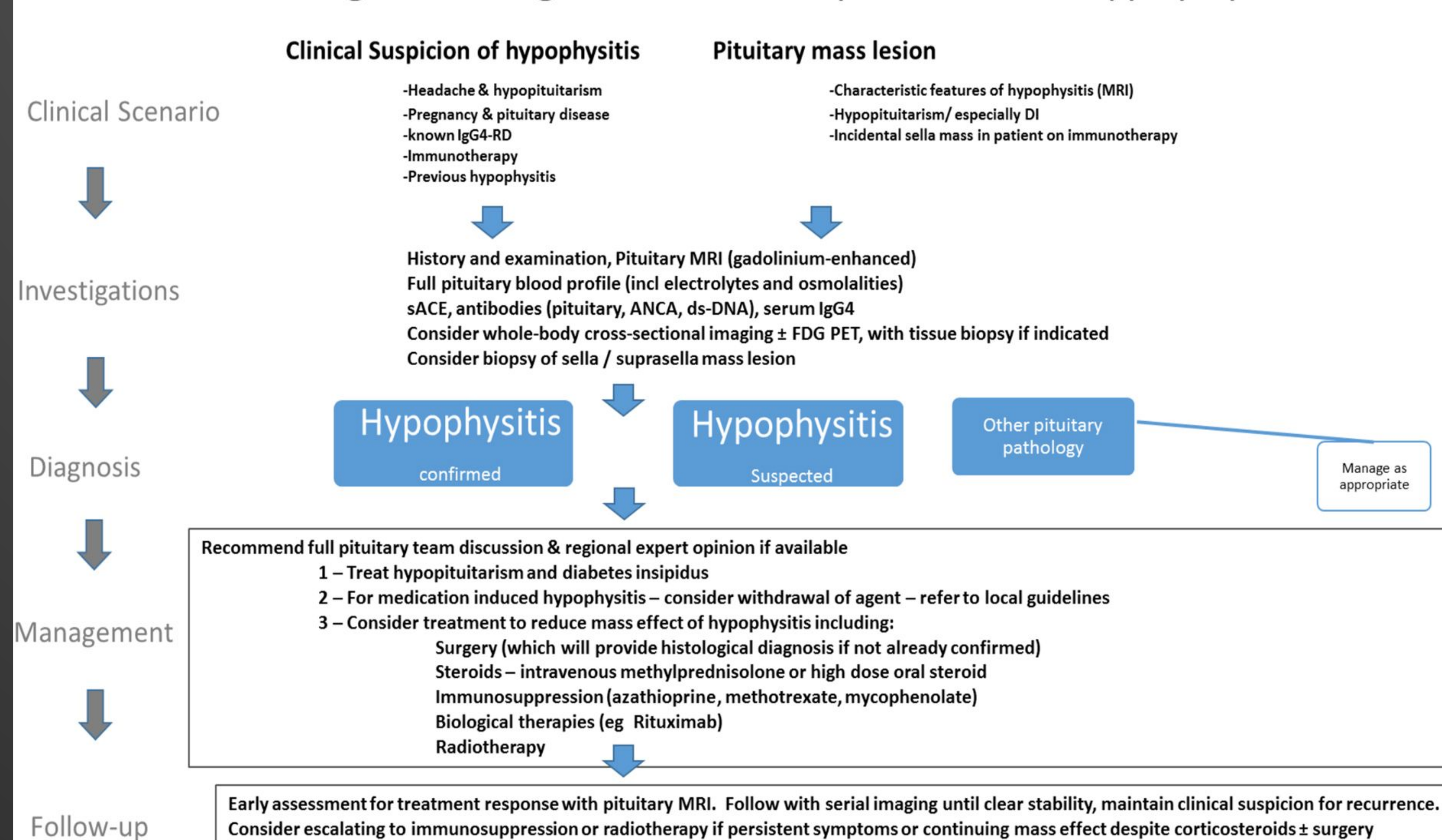
- This study is a systematic literature review analyzing peer-reviewed articles from animal and human clinical studies. It will contain qualitative and quantitative analysis.
- There are statistics and reports available from different countries that review the ratio of men versus women as well as certain age groups that are susceptible to hypophysitis.
- This study also analyzes what diagnosis procedures and treatments are effective. Some studies include in depth research into relapses due to medication tolerance as well as side effects to certain drugs.

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Management algorithm for the patient with hypophysitis



Significance

- Science is continually finding new and more effective ways to treat diseases. Studying hypophysitis is crucial in understanding how it manifests so that effective diagnosis and treatments can be given to those who are suffering. The disadvantage to this topic is the lack of complete and long term human studies that are consistent.

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