

# Thymus Gland and COVID-2019

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## INTRODUCTION

The thymus gland is a small organ behind the sternum, which affect our defence mechanisms by regulating our immune system. COVID -2019 caused pandemic disease and till now all drugs are in RCT, so we know little about this new virus and its treatment.

## METHODS

Literature review on immune system, thymus, viruses.

## DISCUSSION

The results of static in COVID 2019 mortality were 2.7% of infected men died, 1.7% of women, 0.2% of children. So the question was about 0.2 % in children why low? There were many explanations of these findings

Either this group is less likely to be infected in the first place, or may effects of vaccines, or others. So I made this review of thymus function to explain why bodies of children can hope the virus.

## FUNCTION OF THYMUS

Thymus has function of lymphatic organ and an endocrine organ, it begin its work before birth until puberty.

### 1. T-Cell Training Ground

During child hood, immature T cells (progenitor cells) that originate in the bone marrow travel via blood stream to the thymus gland when they mature and differentiate into specialized T cells.

#### Types of T cells

**Cytotoxic T cells:** These cells are responsible for directly killing infected cells.

**Helper T cells:** These cells are responsible for both causing production of antibodies by B cells and activating other types of T cells to address a foreign invader like virus.

**Regulatory T cell:** These cells function as police they suppress both B cells and other cells.

### 2. Positive and negative selection

### 3. Hormone production

The thymus gland produces several hormones including:

Thymopoitin and thymolin, which are hormones that assist in the process where the T-cells differentiate into different types.

Thymosine, which accentuates the immune response as well as stimulating pituitary hormones such growth hormone.

Thymic Humoral Factor, which acts similarly to thymosine, but increase the immune response to viruses in particular.

In terms of above, i.e., can understand children immunity against viruses and why old age is at risk of cancer and viruses.

## SUGGESTIVE TREATMENT

**ZADAXIN:** I mean Thymosine alpha1 which indicated in as monotherapy or combination therapy with interferon in the treatment of hepatitis B and viruses.

**NEW IMMUNOTHERPY** approach is called Adaptive Cell Transfer (ACT). Collecting and using patients own immune cells to treat their cancers.

In 2017, two CART-cell therapies were approved by Food Drug Administration (FDA) Bone for the treatment of children with acute lymphoblastic leukemia, other for lymphoma. I hope to see those medications in RCT to treat COVID-2019.

## SUMMARY

The world is experiencing a global viral pandemic and this was motivation for us to understand more knowledge's about this virus,

Immune system, thymus. As a result the connection between those subjects may help in treatment of this pandemic problem.

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