Introduction

CVID definition
- "characterized by low levels of serum immunoglobulins and antibodies"\(^1\)

B Cell Development Pathway

Human endogenous retrovirus (HERV)
- ~1-8% of the human genome\(^3\)
- Transferred to next generation as transcriptionally inactivated

HERV-K
- Highly biologically active since able to produce retroviral particles\(^2\)
- Connected to oncogenesis\(^2\)
- High titers of HERV-K RNA in blood of lymphoma and breast cancer patients

Research Question

Does the lack of protective immunity in immunocompromised patients permit bacterial translocation from the gastrointestinal tract into the blood, resulting in the reactivation of endogenous retroviral elements?

Materials and Methods

Patients
- 33 immunodeficient
- 20 healthy

PBMC samples

Plasma samples

Trifol treatment

DNAseq treatment

RT-qPCR HERV-K

\(\beta\)-actin

\(\beta\)-GAPDH

\(\text{CD} 14\) EUSA

Total IgA, IgM, & IgG EUSA

Results

IgA levels lower in CVID than healthy patients indicate lower gastrointestinal immunity

Negative correlation between IgA and sCD14 in CVID patients suggests higher risk of bacterial infections

Higher expression of HERV-K in CVID patients compared to healthy patients

Discussion

Future Work

Obtain treatment status for remaining CVID patients

Apply to other immunocompromised cohorts

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References