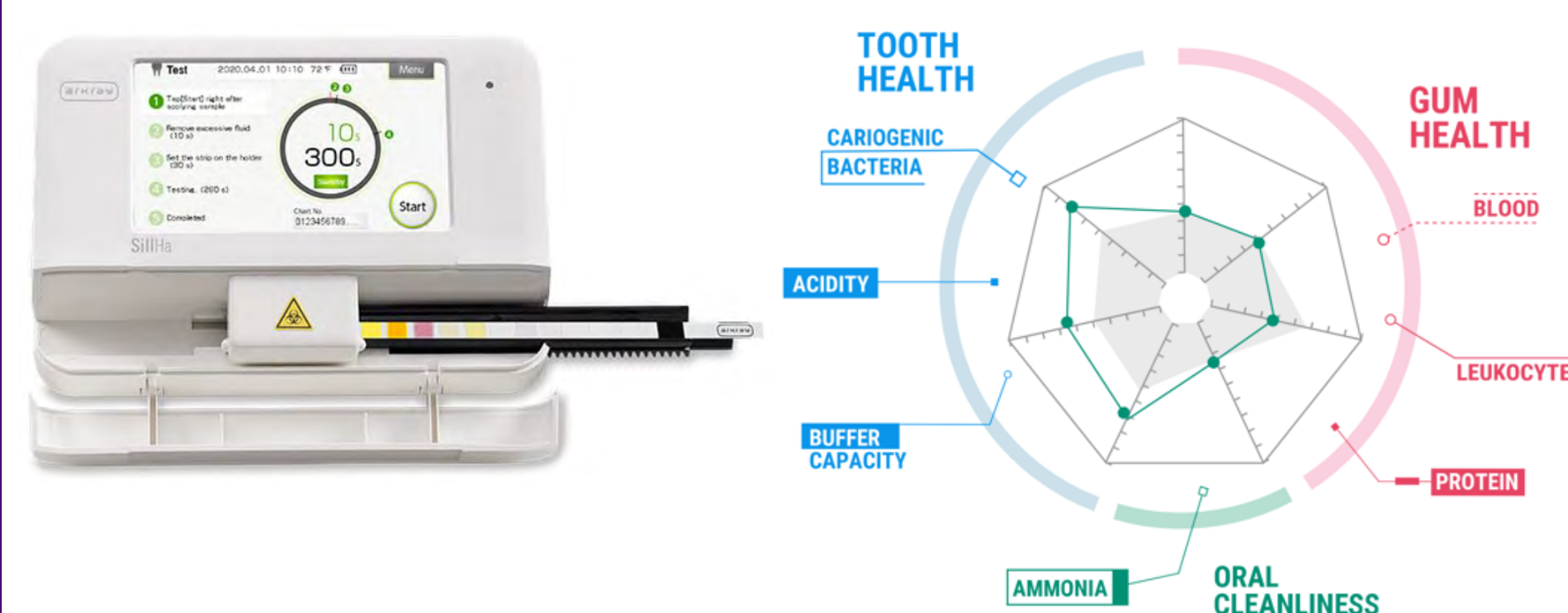


INTRODUCTION

Periodontitis is a serious gum infection that damages the soft tissue around teeth. Left untreated, periodontitis can lead to bone and tooth loss. Furthermore, studies have shown periodontitis has adverse effects on various systemic health conditions, which makes it both an oral and systemic health concern. The effects of periodontitis are irreversible, providers recognize this and make it a priority to assess patients for periodontal risk. The gold standard for periodontal risk assessment relies primarily on clinical examination. During these examinations providers assess levels of plaque, sites with bleeding on probing (BOP), pocket depth, bone loss, etc. These clinical examinations are very thorough and yield accurate assessments. However, these assessments establish risk after the biologic onset of the disease process and are unable to substantiate disease activity or future risk. Is there a tool that could be used in conjunction with traditional periodontal risk assessment that could remedy this limitation? Several studies are beginning to highlight saliva as a potential screening method for periodontal risk, and some have already identified inflammatory biomarkers within our saliva. The purpose of this study is to evaluate the Sill-Ha Oral Wellness System as a potential complimentary tool to traditional periodontal risk assessment.

Hypothesis & Aim

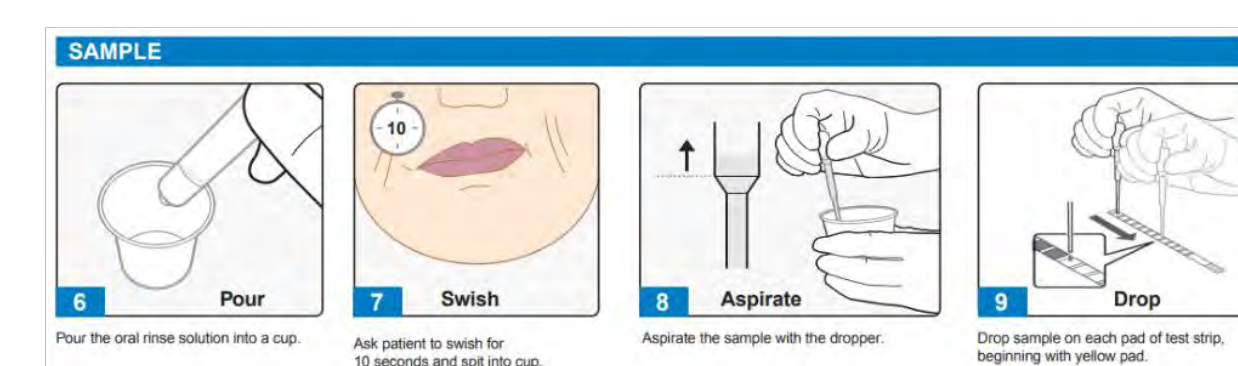
- **Sill-Ha Oral Wellness System:** The Sill-Ha Oral Wellness system is a salivary screening tool that yields a multipoint analysis of patient's saliva. This includes cariogenic bacteria, acidity, buffer capacity, blood, leukocytes, protein, and ammonia.
- **How It Works:** The Sill-Ha Machine uses dual-wavelength reflectance spectrometry to measure key saliva biomarkers through a chemical reaction on test pads.
- **Hypothesis:** Participants with some degree of periodontitis will reflect higher blood, leukocyte, and protein scores.
- **Aim:** Find an association between data from Sill-Ha and participants electronic health records (EHR) data.



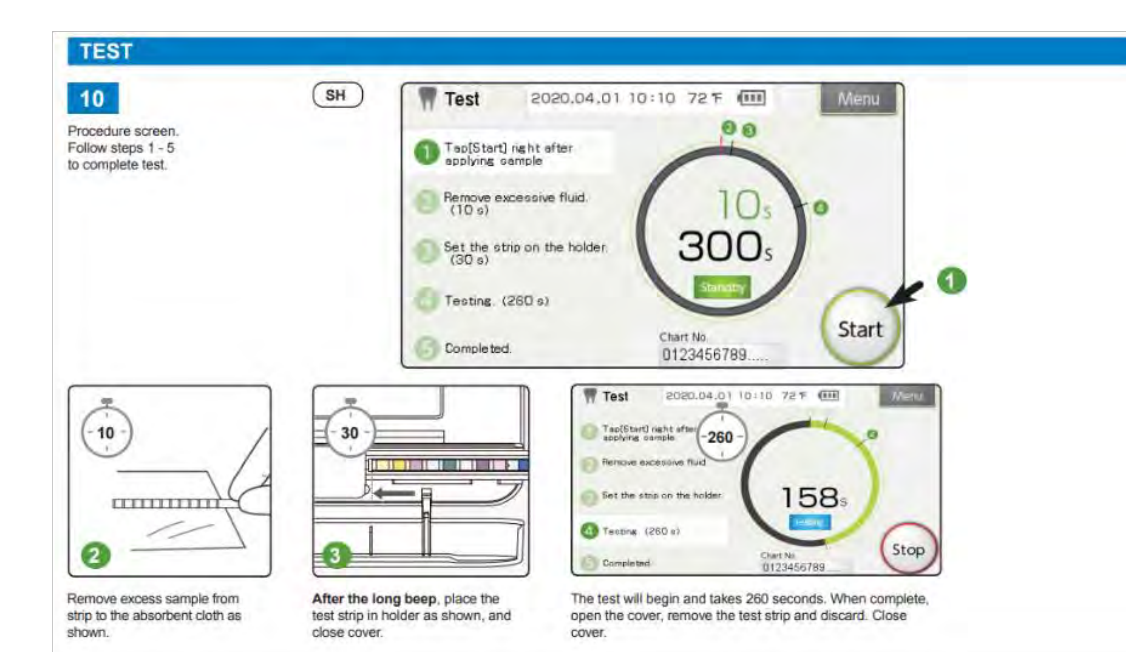
MATERIALS & METHODS



We recruited 30 existing patients from clinics within the ECU School of Dental Medicine. Half (n=15) of these patients will be at low risk for periodontal disease as determined by the data in their electronic health records, while the other half (n=15) will have some degree of existing periodontal disease



Participants were required to do a "swish & spit" of 3mL of distilled water



Salivary samples were ran through the Sill-Ha machine

RESULTS

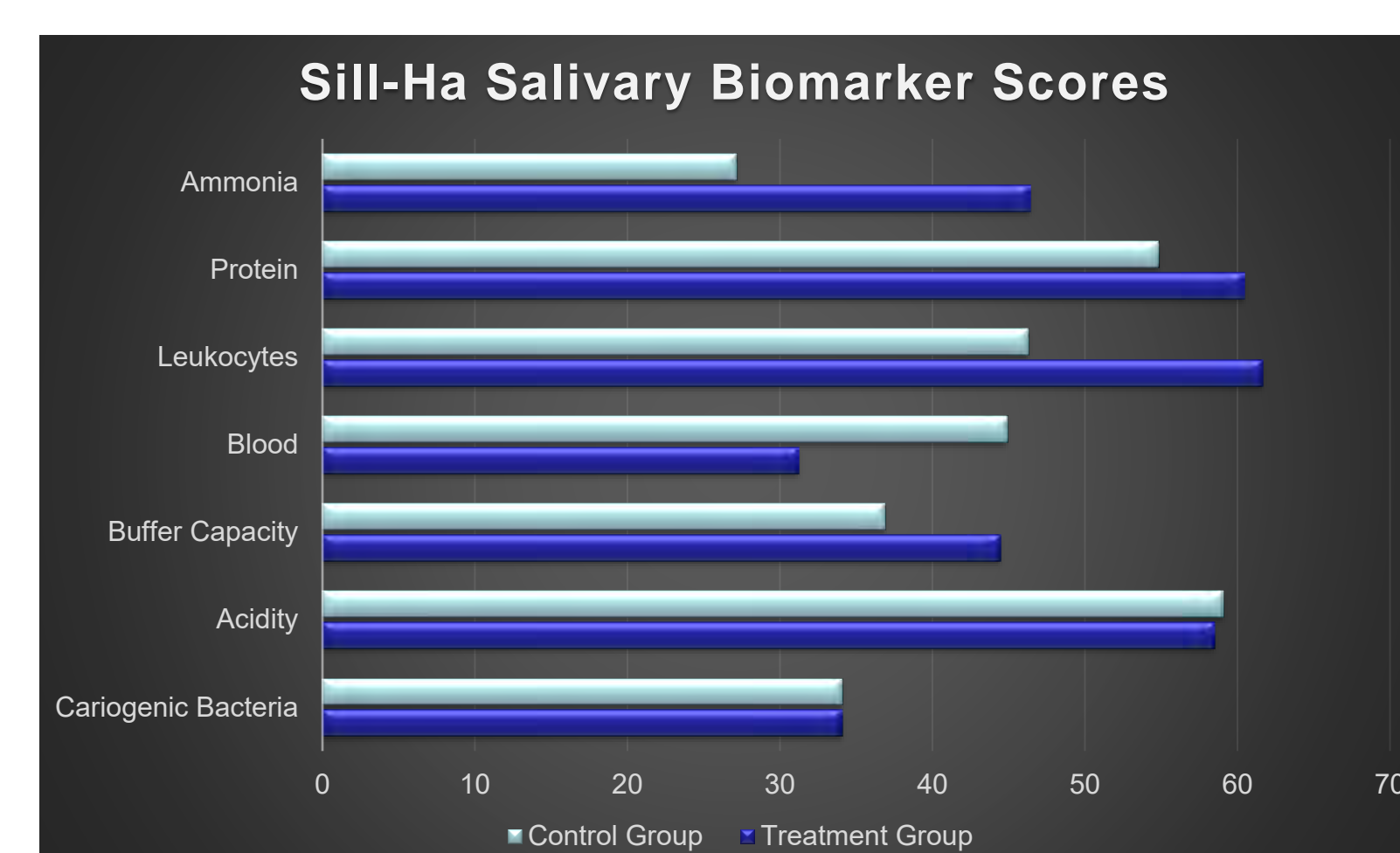


Figure 1: Comparison of average salivary biomarker scores

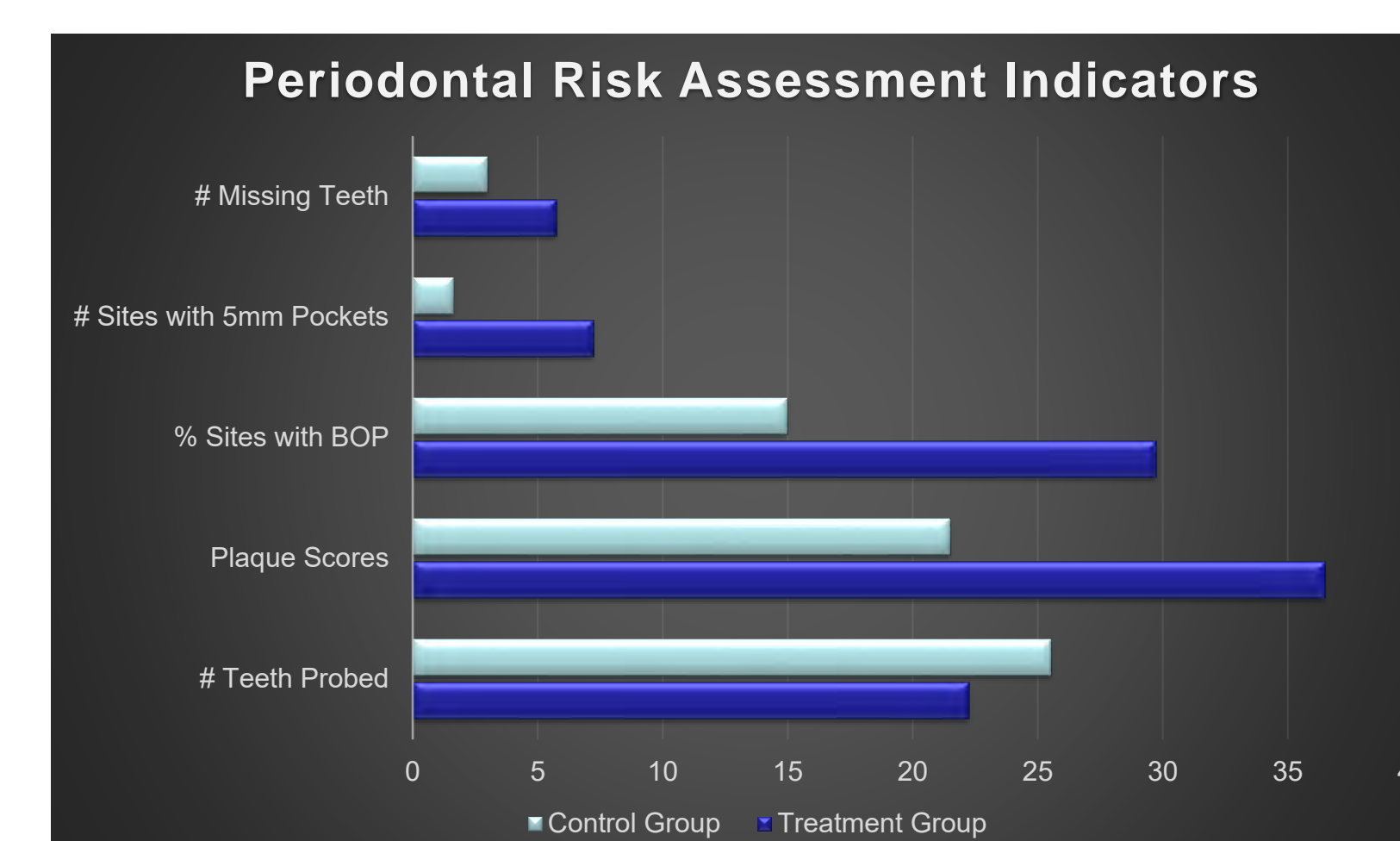


Figure 2: Comparison of average risk assessment indicators between

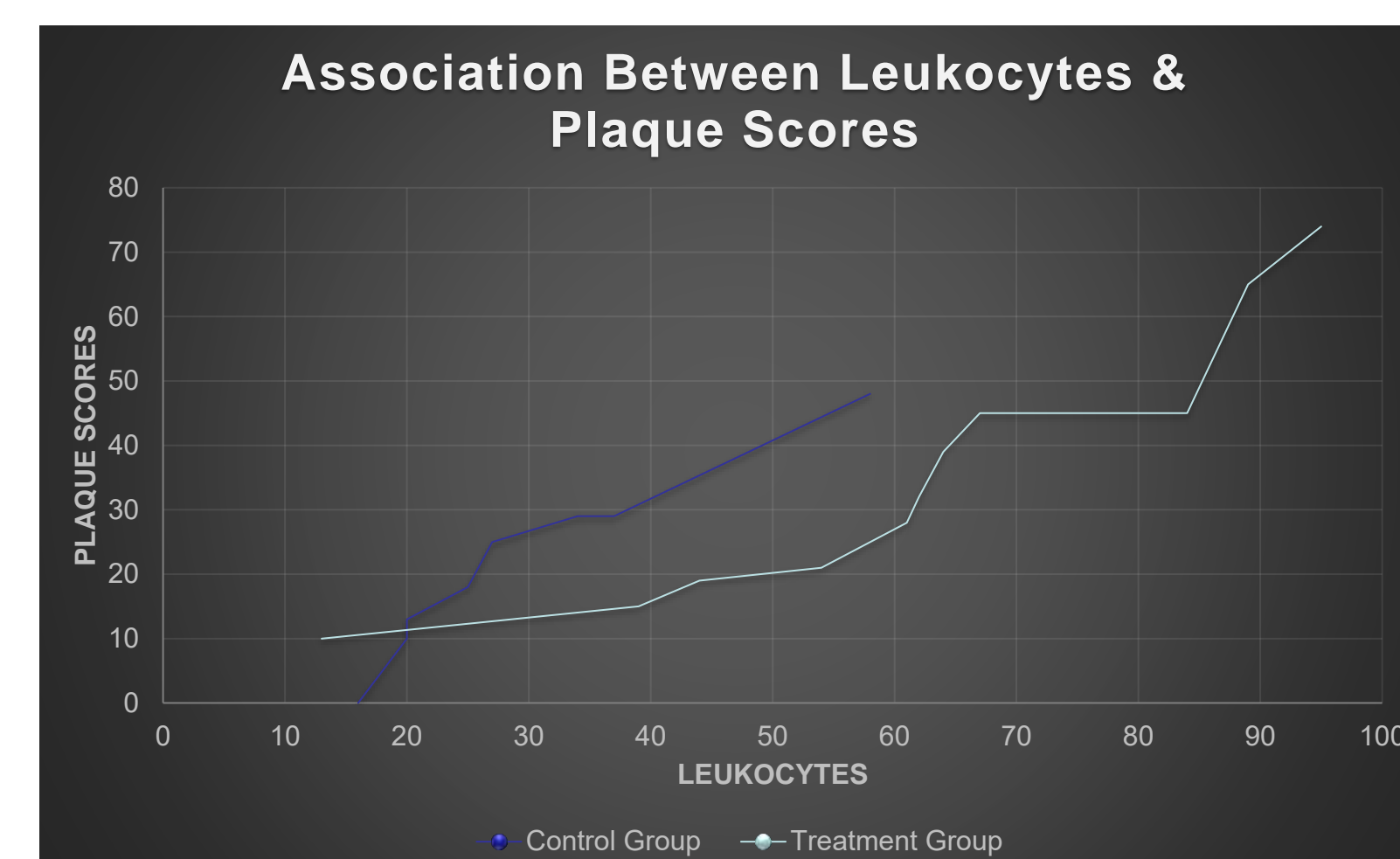


Figure 3: Association between leukocyte and plaque scores

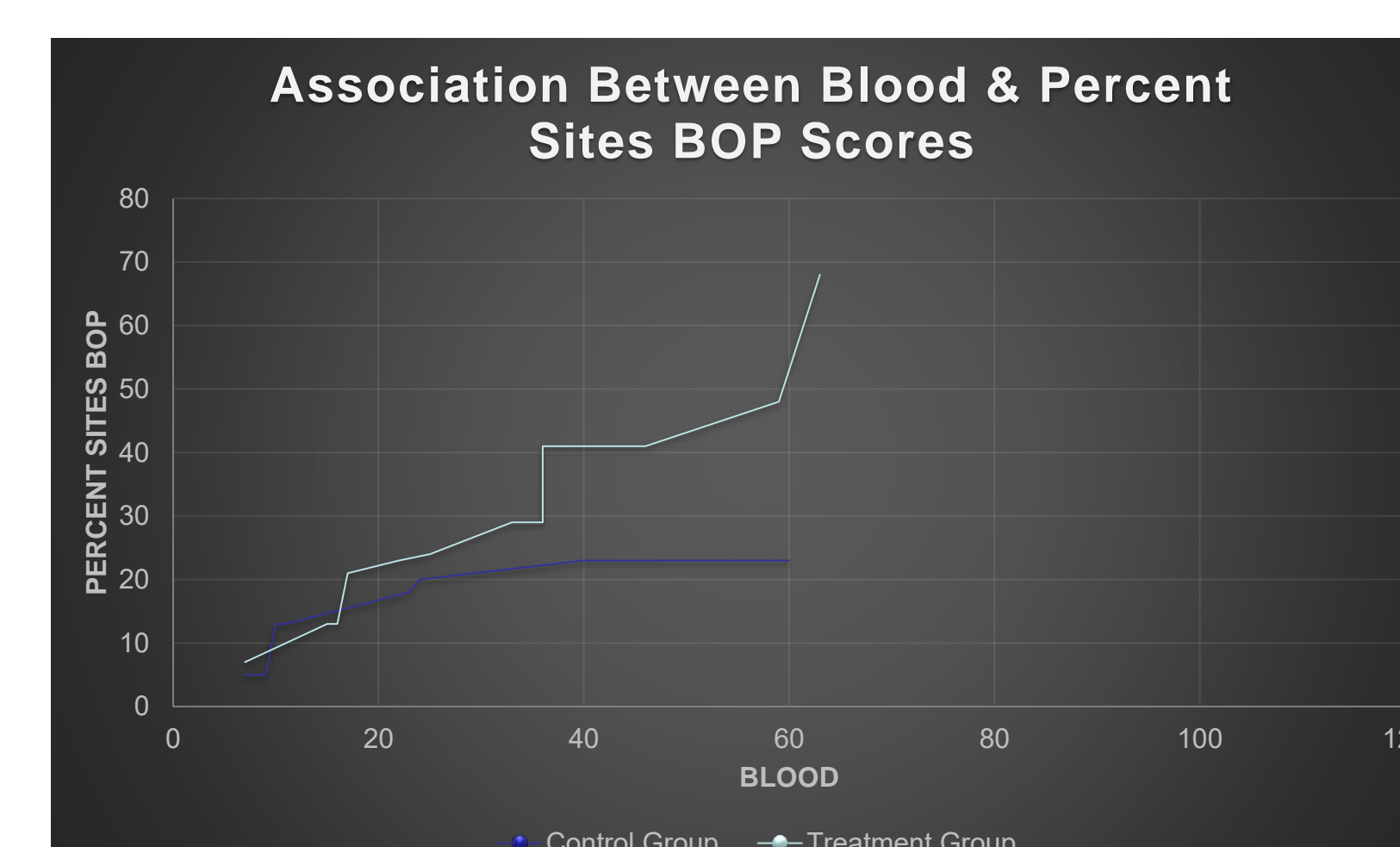


Figure 4: Association between blood and percent of sites with BOP

DISCUSSION

- On average, leukocytes and protein scores were higher in the treatment group
- However, blood scores were higher in the control group
- There was association between leukocytes (reported by Sill-Ha) and plaque (reported by EHR)
- There was also an association between blood (Sill-Ha) and percent of sites with BOP (EHR)
- **Limitations**
 - Population Size
 - Incomplete EHR
- **Conclusion**
 - The results agree with our hypothesis, however more data is to be collected to fully evaluate the Sill-Ha Oral Wellness System as a complimentary tool to periodontal risk assessments

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