

ABSTRACT

Purpose: The purpose of this study was to compare the reported oral complications in children with cancer to others with hematologic conditions and from the 1990s data.

Methods: Pediatric cancer and hematology patients who were admitted to Children's of Alabama were recorded on weekly dental service reports from 2015 to 2022. Oral complications included: gingival inflammation, mucositis, ulceration, candida infection and unmet dental needs (dental caries and abscessed teeth). Oral complications were determined by clinical and/or radiographic examinations by pediatric dental residents.

Results: A total of 139 patients in Hematology-Oncology clinic were reported with oral complications over the 7-year period. 4.59% of the patients developed oral complications (139/3026), in contrast to the results (42.1%) in 1990s. Compared to patients with non-cancer status (i.e. sickle cell anemia, aplastic anemia, hemophilia and other autoimmune disorders), pediatric cancer patients experienced significantly more mucositis (P<0.05), followed by ulceration and gingival inflammation. Furthermore, children with cancer were found to have significantly more unmet dental needs (P<0.001). 72.7% of the cancer patients had unmet dental needs, which is 7.3% decrease from 1990s.

Conclusion: Compared to results from 1990s, the current study demonstrated decreased prevalence of overall oral complications as well as unmet dental needs among pediatric cancer patients.

INTRODUCTION

Childhood cancer is a leading cause of death for children and adolescents. Each year, approximately 400,000 children and adolescents of 0-19 years old are diagnosed with cancer [1]. In 2021, approximately 15,500 children and adolescents will be diagnosed with cancer and 2,000 will die of the disease in the United States [2]. Specifically, among children ages 0-14 years, it is estimated that about 10,000 will be diagnosed with cancer and 1,200 will die of the disease [2]. Also, 5,090 adolescents ages 15-19 years will be newly diagnosed with cancer and about 600 will die of the disease [2].

A 1993 study [3] described the patterns of oral complications in pediatric patients with cancer. The results show the incidence of ulcers in these patients were the highest followed by gingivitis. Overall, this study concluded that oral complications are a frequent cause of morbidity in children with cancers and are more common in specific cancers than in others.

Due to significant advancements in treatment modalities, the prognosis for children with malignancies has greatly improved [4]. A significant increase in acute oral sequelae such as mucositis, erythema, infection, bleeding, and xerostomia resulted from the advances of chemotherapy in 1940 [5; 6].

The purpose of this study is to describe the oral complications in children with cancer at Children's of Alabama and to compare the reported results from the study published in 1993, utilizing the weekly Hematology-Oncology reports completed by UAB Pediatric Dental residents.

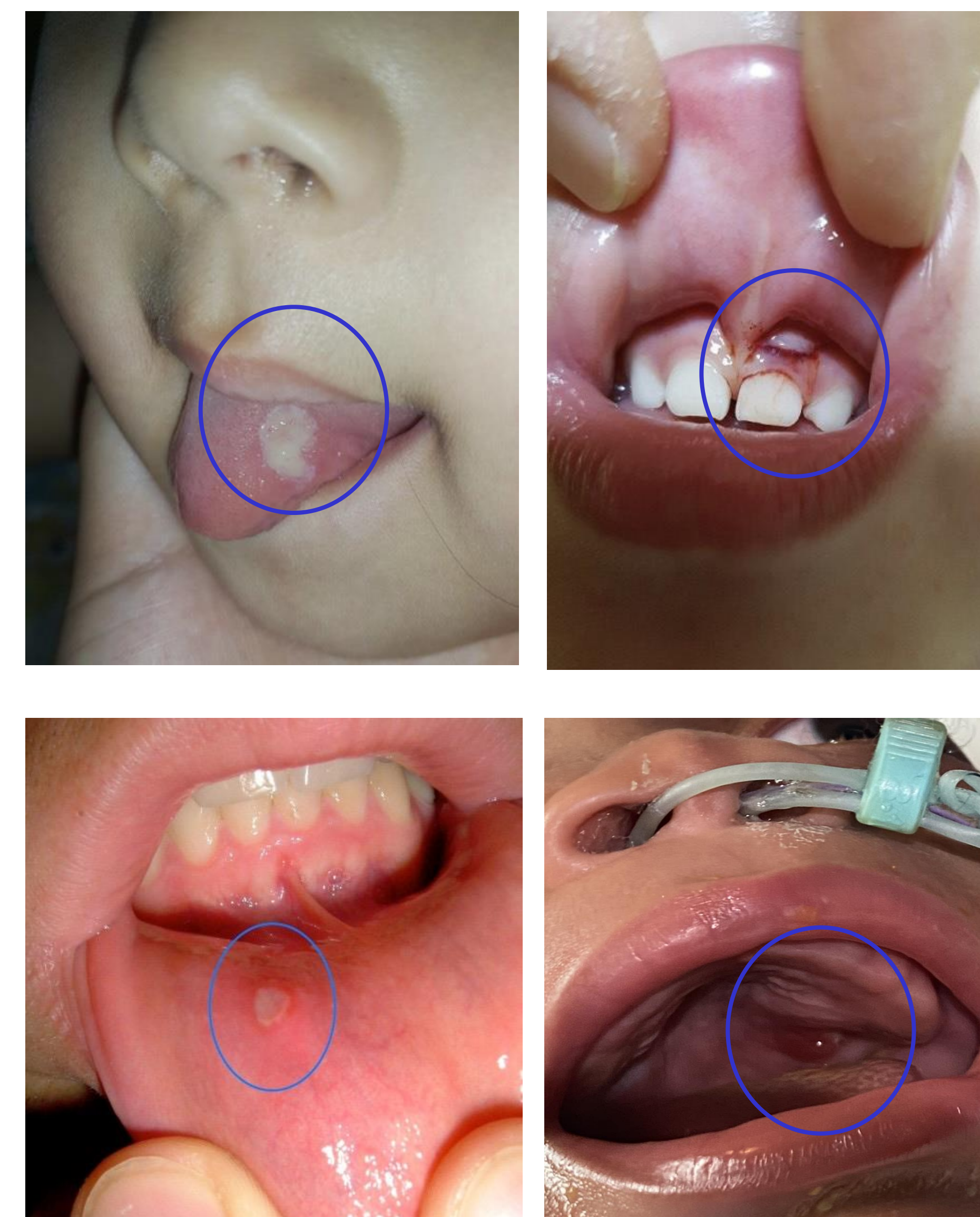
MATERIALS AND METHODS

- Pediatric cancer and hematology patients admitted to Children's of Alabama.
- Recorded on weekly dental service reports from 2015 to 2022 .
- Oral complications included: gingival inflammation, mucositis, ulceration, candida infection and unmet dental needs (dental caries and abscessed teeth).
- Oral complications were determined by clinical and/or radiographic examinations by pediatric dental residents.
- One proportion test was used to compare complication percentage between children with and without cancer.

RESULTS

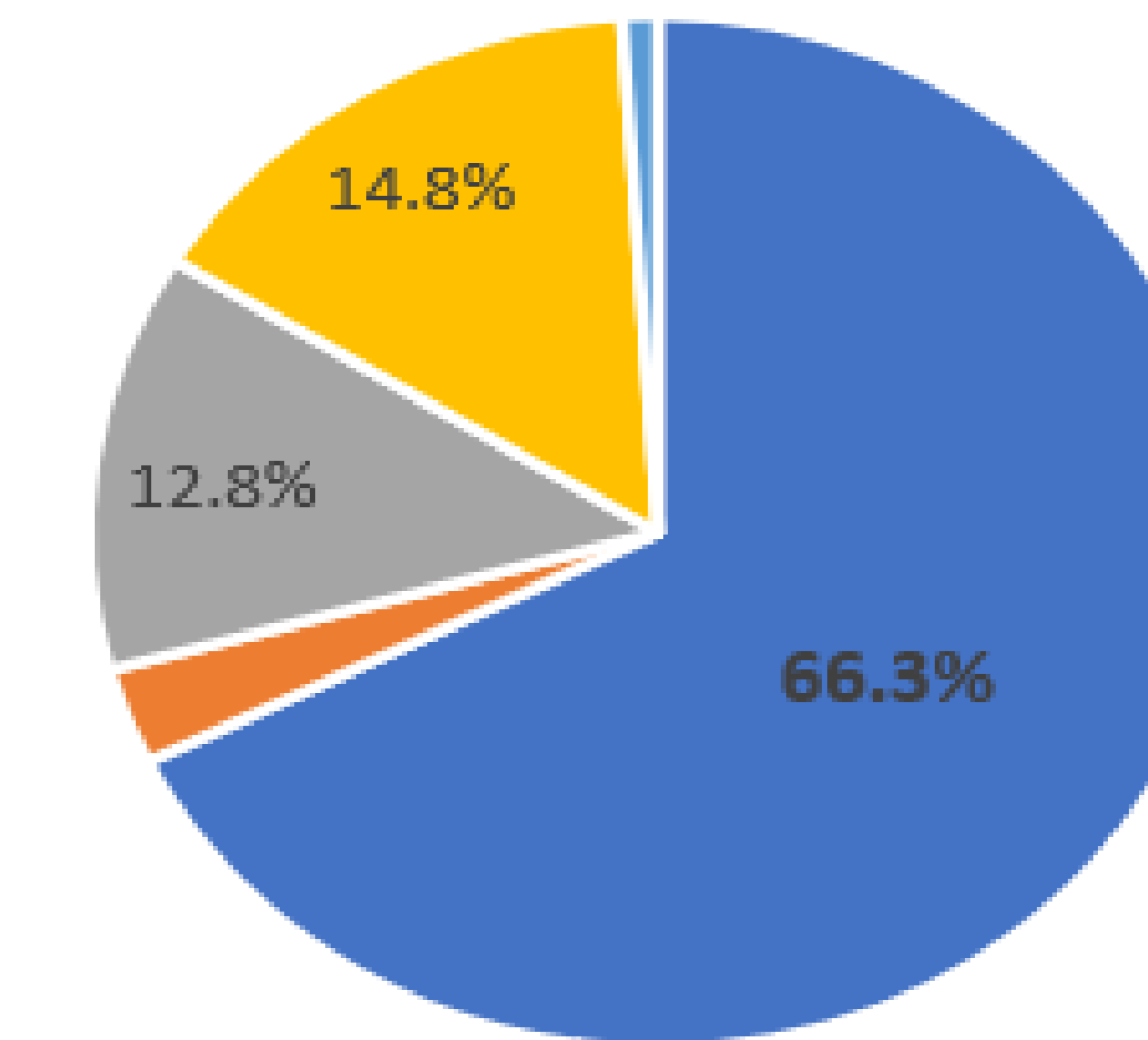
- A total of 139 patients in Hematology-Oncology clinic were reported with oral complications over the 7-year period.
- 4.59% of the patients developed oral complications (139/3026), in contrast to the results (42.1%) in 1990s.
- Compared to patients with non-cancer status, pediatric cancer patients experienced significantly more mucositis (P<0.05), followed by ulceration and gingival inflammation.
- Children with cancer were found to have significantly more unmet dental needs including abscessed teeth (P<0.001).

TABLES & FIGURES



TABLES & FIGURES

Incidence of oral complications among pediatric cancer patients



- Unmet dental needs & Abscess teeth
- Mucositis
- Candidiasis
- Gingival inflammation
- Ulceration

CONCLUSIONS

Compared to results from 1990s, the current study demonstrated decreased prevalence of overall oral complications as well as unmet dental needs among pediatric cancer patients. Use of granulocyte colony stimulating factors (G-CSF) at the completion of chemotherapy has contributed to not only reducing the duration of neutropenia but also improving the recovery process in children with cancer.

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