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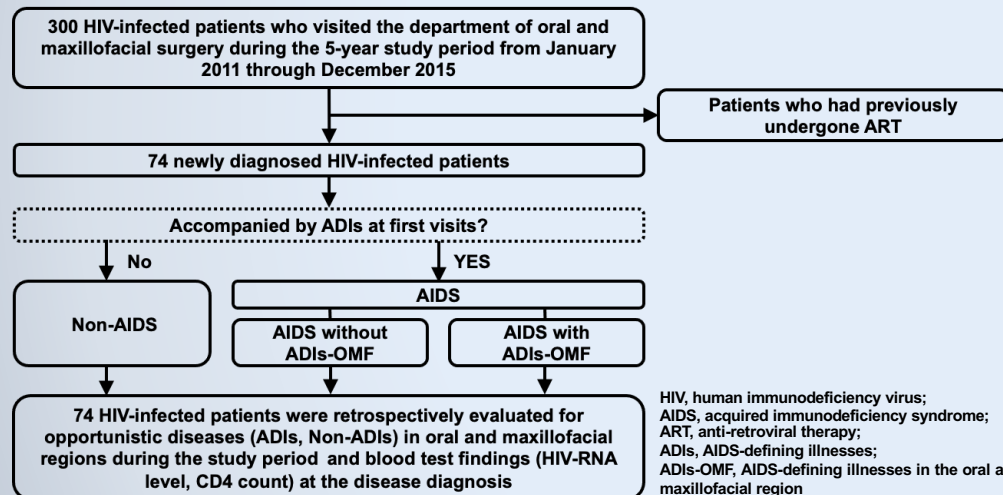
## Introduction

Acquired immune deficiency syndrome (AIDS) is characterized by reduced immune function owing to infection by the human immunodeficiency virus (HIV), accompanied by various opportunistic infections and tumors, including AIDS-defining illnesses (ADIs). However, few reports have documented findings of ADIs/non-ADIs occurring in oral and maxillofacial regions (ADIs-OMF/non-ADIs-OMF). We examined the occurrence of ADIs-OMF/non-ADIs-OMF and verified their correlations with CD4-positive T-lymphocyte (CD4) counts and HIV-RNA levels at diagnosis.

## Patients and Methods

### Inclusion criteria

### Exclusion Criteria



We conducted a retrospective study using medical records and selected HIV-infected patients ( $\geq 18$  years old) who visited our institute between January 2011 and December 2015. Patients who had previously undergone anti-retroviral therapy (ART) were excluded. Non-ADIs-OMF was defined as opportunistic diseases known to occur in patients with immunosuppression. The study period ranged from the day of the first visit to the day before ART initiation. In cases which was followed without ART, we defined the period ranged from the day of the first visit to the day of the last visit.

All investigations were performed according to the protocols that were reviewed and approved by the ethical committee of National Center for Global Health and Medicine (NCGM-S-004448-00).

## Results

Table 1. Distribution of patients with HIV infection and the occurrence of ADIs-OMF/non-ADIs-OMF in this study

Pt. with HIV infection	Total No. of Pt.	No. of Pt. with ADIs-OMF	No. of Pt. with non-ADIs-OMF
Non-AIDS	43	–	12
AIDS	31	5	23
<b>Total</b>	<b>74</b>	<b>5 / 74 (6.7%)</b>	<b>35 / 74 (47.3%)</b>

Age range 20–75 years (median, 39 years)

OKS, oral Kaposi sarcoma; CS, cytomegaloviral stomatitis; NUG, necrotizing ulcerative gingivitis; OC, oral candidiasis; SBI, serious bacterial infection such as cheek cellulitis; HZ, herpes zoster

Table 2. Details of ADIs-OMF/non-ADIs-OMF and blood test results at diagnosis

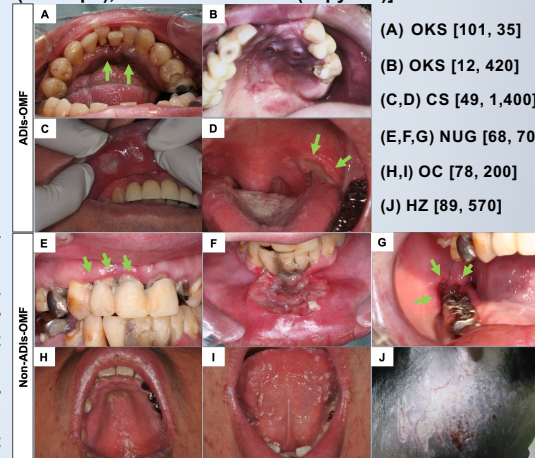
ADIs-OMF/non-ADIs-OMF	No. of Pt.	Median CD4 count [range] (count/ $\mu$ L)	Median HIV-RNA level $\times 10^3$ [range] (copy/mL)
<b>ADIs-OMF</b>		23 [12-101]	420 [35-1,400]
OKS	3	20 [12-101]	62 [35-420]
CS	2	36 [23-49]	1250 [1,100-1,400]
<b>Non-ADIs-OMF</b>		83.5 [3-567]	100 [4.8-1,800]
OC	28	77.5 [3-448]	135 [40-4,000]
SBI	5	537 [24-567]	50 [7.7-1,800]
NUG	3	22 [21-68]	70 [44-73]
HZ	2	290 [89-491]	287 [4.8-570]

## Summary

In total, 300 patients with HIV infection visited our institute. After exclusion, we identified 74 patients (71 males and 3 females) with a median age of 39 (range: 20–75) years. Of these, 5 patients (6.7%) experienced ADIs-OMF, including oral Kaposi sarcoma (n=3) and cytomegaloviral stomatitis (n=2). Non-ADIs-OMF were documented in 35 of 74 (47.3%) patients, including oral candidiasis (OC) (n=28), cheek cellulitis or abscess (n=5), necrotizing ulcerative gingivitis (NUG) (n=3), and herpes zoster (n=2). Three patients had both OC and NUG. The median CD4 and HIV-RNA were 23 (range, 12–101) count/ $\mu$ L and 420,000 (range, 35,000–1,400,000) copy/mL in ADIs-OMF and 83.5 (range, 3–567) count/ $\mu$ L and 100,000 (range, 4,800–1,800,000) copy/mL in non-ADIs-OMF, respectively. There were no significant differences in CD4 and HIV-RNA between ADIs-OMF and non-ADIs-OMF. Considering patients with non-ADIs-OMF, 23 (65.7%) were in the AIDS phase.

In conclusion, the findings of this study suggest that both ADIs-OMF and non-ADIs-OMF are notable findings and can provide reference information for AIDS diagnosis.

Figure 1. Cases of ADIs-OMF/non-ADIs-OMF [CD4 count (count/ $\mu$ L), HIV-RNA level  $\times 10^3$  (copy/mL)]



## Conflict of interest

None of the authors has any conflict of interest in this work.