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Five-year survival rate in 2002 of head and neck cancer patients treated at Lopburi Cancer Center

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Sukhaboon J. Five-year survival rate in 2002 of head and neck cancer patients treated at Lopburi Cancer Center. Chula Med J 2011 Sep – Oct; 55(5): 447 - 56

- Background** : *Head and neck cancer is a leading type of cancer in Thailand. According to clinical data base from the Lopburi Cancer Center, head and neck cancer ranks first among all cancer types in men and ranks the third among all cancer types in women. Unfortunately, there has been a lack of information of five-year survival rate of head and neck cancer patients treated at Lopburi Cancer Center.*
- Objective** : *To determine 5-year survival rate and prognostic factors for survival of patients with head and neck cancer treated with combined-modality therapy at Lopburi Cancer Center.*
- Setting** : *Lopburi Cancer Center.*
- Material and Method** : *The author retrospectively analyzed the patient-tumor characteristic and treatment outcomes of 338 patients with head and neck cancer who were treated at Lopburi Cancer Center 2002. The author used Kaplan-Meier method to describe the overall survival. The author analyzed associations of patients and tumor characteristics with overall survival rate using the log-rank test.*

- Results** : *There were 272 deaths. The 5-year survival was 18.34%. The median survival was 1.063 years (95% confidence interval, 0.953-1.173years). The characteristics was statistically significant associated with decreased survival included the stage of disease and body mass index (BMI).*
- Conclusion** : *Overall, the prognosis of patients with head and neck cancer was not good. The subgroup of patients who presented with advanced stage of the disease and body mass index (BMI) <18.5kg/m² had a poor long-term outcome.*
- Keywords** : *Head and neck cancer, survival analysis, prognosis, treatment outcome.*

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จිරศักดิ์ สุขานุวัฒน์. อัตราการรอดชีวิตที่ 5 ปีของผู้ป่วยมะเร็งศีรษะและลำคอในปี 2002
ที่ได้รับการรักษาที่ศูนย์มะเร็งกรุงเทพ. จุฬาลงกรณ์เวชสาร 2554 ก.ย. - ต.ค.; 55(5):
447 - 56

- เหตุผลของการทำวิจัย** : โรคมะเร็งศีรษะและลำคอเป็นโรคมะเร็งที่พบมากเป็นอันดับต้น ๆ ในประเทศไทย สอดคล้องกับข้อมูลของศูนย์มะเร็งกรุงเทพที่พบว่า มะเร็งศีรษะและลำคอพบมากเป็นอันดับที่ 1 ในเพศชาย และพบมากเป็นอันดับที่ 3 ในเพศหญิง แต่เรายังไม่มีข้อมูลอัตราการรอดชีวิตที่ 5 ปีของผู้ป่วยมะเร็งศีรษะและลำคอที่มารักษาในศูนย์มะเร็ง กรุงเทพ
- วัตถุประสงค์** : การศึกษาี้ เพื่อศึกษาอัตราการอยู่รอดและปัจจัยที่มีผลต่อการรักษาโรคมะเร็งของผู้ป่วยมะเร็งศีรษะและลำคอที่เข้ามารักษาที่ศูนย์มะเร็ง กรุงเทพ
- สถานที่ทำการศึกษา** : ศูนย์มะเร็ง กรุงเทพ
- วัสดุและวิธีการ** : การศึกษาย้อนหลังในผู้ป่วย 338 รายที่ได้วินิจฉัยว่าเป็นมะเร็งศีรษะและลำคอ ที่มาเข้ารับรักษาที่ศูนย์มะเร็งกรุงเทพทั้งหมดในปี ค.ศ. 2002 โดยทำการวิเคราะห์ผลการรักษา และคุณลักษณะของผู้ป่วย และคุณลักษณะของโรคมะเร็งโดยใช้ Kaplan Meier และเปรียบเทียบทางสถิติโดยใช้ Log rank test
- ผลการศึกษา** : มีผู้ป่วยที่เสียชีวิต 272 ราย อัตราการอยู่รอดที่ 5 ปีของผู้ป่วยทั้งหมดคือ ร้อยละ 18.34 ค่ามัธยฐานของการรอดชีวิตของผู้ป่วยทั้งหมด คือ 1.063 ปี ปัจจัยที่มีนัยสำคัญทางสถิติที่มีผลต่อการพยากรณ์อัตราการอยู่รอดต่ำ ได้แก่ ระยะของโรค และดัชนีมวลกาย
- สรุป** : โดยภาพรวมนั้นมะเร็งศีรษะและคอที่มารักษาที่ศูนย์มะเร็ง กรุงเทพ มีพยากรณ์โรคที่ไม่ค่อยดี โดยเฉพาะกลุ่มของผู้ป่วยที่มีระยะของโรคมะเร็งที่สูงและดัชนีมวลกาย $< 18.5 \text{ kg/m}^2$ พบว่ามีผลการรักษาที่ต่ำกว่า
- คำสำคัญ** : มะเร็งศีรษะและลำคอ, การวิเคราะห์การอยู่รอด, พยากรณ์โรค, ผลลัพธ์ของการรักษา.

Head and neck cancer is a leading type of cancer in Thailand. According to clinical data base from the Lopburi Cancer center, head and neck cancer ranks first among all cancer types in men (it accounts 48.79%, 48.16% and 47.59% of all cancer types in 2005, 2006 and 2007, respectively) and ranks the third among all cancer types in women (12.25%, 10.24% and 10.16% of all cancer types in 2005, 2006 and 2007, respectively).

Recently, the combination of main types of treatments, such as surgery, chemotherapy and radiation therapy are used for managing head and neck cancer.⁽¹⁾ The data indicates that chemotherapy given at the same time as radiation therapy is more effective than treatment with one modality, such as radiation.^(2,3) The clinical result is also more effective in the patients who received cancer surgery followed by the combination of radiation therapy and chemotherapy.^(4,5)

The clinical data indicates that people with high BMI (Body Mass Index) have a greater risk of death by cancer, heart disease, stroke and other diseases than people with normal BMI.⁽⁶⁾ Nevertheless, head and neck cancer with low BMI is more likely to risk of the death and cancer patient with normal BMI.

Lopburi Cancer Center has been a cutting edge of head and neck cancer treatment. Nevertheless, it has never reported the results of cancer treatments, particularly in term of five-year survival rate of patients diagnosed with head and neck cancer.

Measuring the survival rate of patients is beneficial, and refers to the effectiveness of cancer treatment and helps us identify factors influencing the

survival rate of patients diagnosed with head and neck cancer.

Material and Method

The method of this study is retrospective review of medical records, the records were obtained from Lopburi Cancer Center in 2002, and the estimated number of head and neck cancer is of 348 cases.⁽⁷⁾ Ten patients were excluded from the study for the following reasons: unknown primary cancer (3 patients); no evidence of head and neck cancer (7 patients).

According to the historical records, the cancerous tissues of patients are used to confirm the diagnosis of head and neck cancer, i.e., cancer of the oral cavity, nasopharynx, oropharynx, hypopharynx, larynx, salivary gland and paranasal sinus. This method is used in accordance with the NCCN guideline.⁽¹⁾ There are main types of treatments for managing head and neck cancer: surgery, radiation and chemotherapy.

This study is done by reviewing medical records of 338 patients diagnosed with head and neck cancer who received cancer treatment at Lopburi Cancer Center during the period of 01 January 2002 - 31 December 2002.

The patient information includes the last death of patient on 12 May 2009, and the survival rate was determined by Kaplan-Meier statistical method; then, Log Rank Test by SPSS computer program was applied for statistical analysis.^(8,9)

Results

The total number of head and neck cancer patients eligible for inclusion in the present study was

338. The median age at the time of diagnosis was 63.5 years (range 15 - 98 years). Thirty-eight percent of patients (n = 130) had oral cavity cancer, 18% had nasopharynx cancer (n = 63) and 14% had oropharynx cancer (n = 50). The majority of tumors

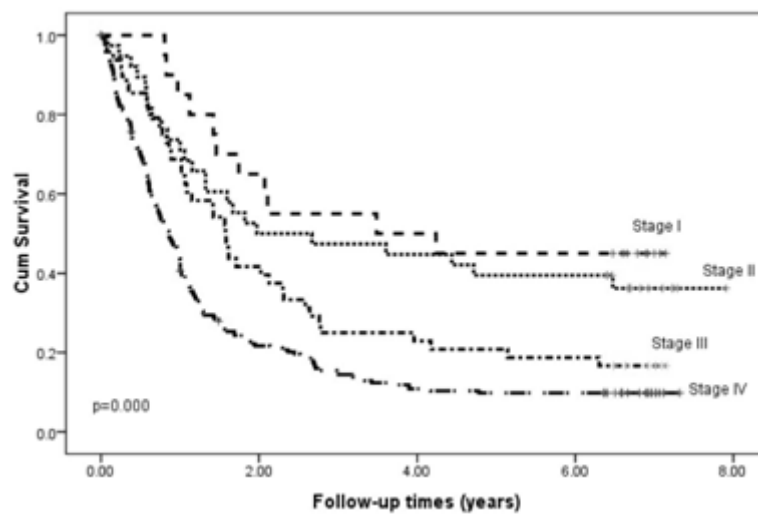
were in stage IV. Twenty patients presented with stage I disease (5.92%), 38 with stage II (11.24%), 48 with stage III (14.20%) and 203 with stage IV (60.06%). See Table 1 shows characteristics of the patients and tumors.

Table 1. Patient and tumor characteristics.

Characteristic	No. of patients	%
All patients	338	100.00
Age at diagnosis(years)		
<35	8	2.37
35-39	14	4.14
40-49	35	10.36
50-59	68	20.12
60-69	108	31.95
≥70	105	31.07
Sex		
Male	214	63.31
Female	124	36.69
Primary tumor		
Oral cavity	130	38.46
Nasopharynx	63	18.64
Oropharynx	50	14.79
Hypopharynx	33	9.76
Larynx	47	13.91
Salivary gland	9	2.66
Paranasal sinus	6	1.78
Histologic type		
Squamous cell carcinoma	287	84.91
Undifferentiated carcinoma	22	6.51
Adenocarcinoma	4	1.18
Mucoepidermoid carcinoma	4	1.18
Other	21	6.21
Tumor grade		
Well differentiated	118	34.91
Moderately differentiated	80	23.67
Poorly differentiated	42	12.43
Undifferentiated carcinoma	22	6.51
Unknown	76	22.49

Table 1. Patient and tumor characteristics. (Continued)

Characteristic	No. of patients	%
Body mass index(BMI)		
<18.5	119	35.21
≥18.5	155	45.86
Unknown	64	18.93
Treatment		
Surgery	18	5.33
Radiation	127	37.57
Chemotherapy	0	0.00
Surgery+Radiation	25	7.40
Surgery+Chemotherapy	0	0.00
Radiation+Chemotherapy	63	18.64
Surgery+Radiation+Chemotherapy	7	2.07
Supportive care	53	15.68
Other	45	13.31
Stage		
I	20	5.92
II	38	11.24
III	48	14.20
IV	203	60.06
Unknown	29	8.58

**Figure 1.** Overall survival by staging of disease.

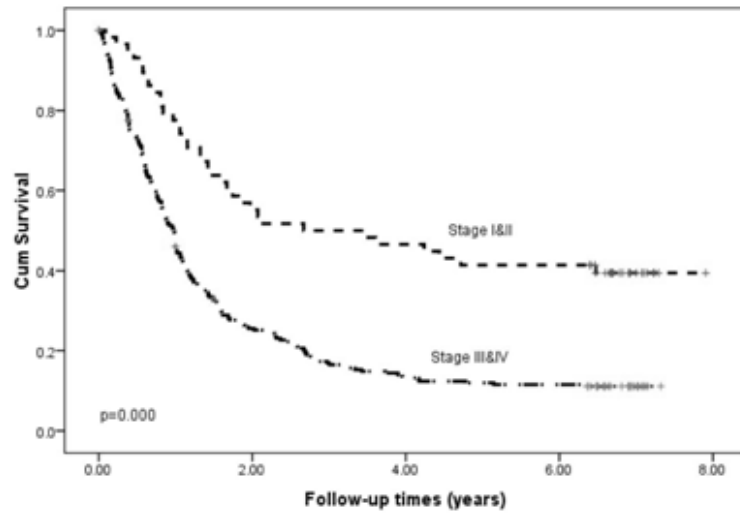


Figure 2. Comparison of overall survival rate, stage I&II and stage III & IV.

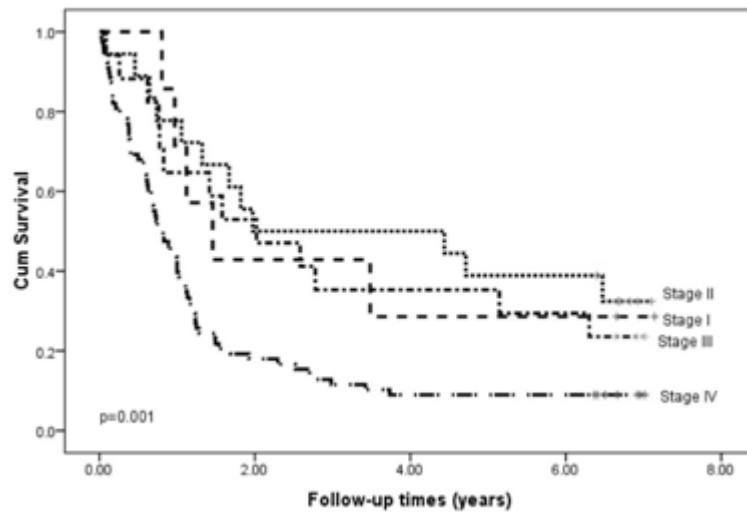


Figure 3. Overall survival by staging of cancer of the oral cavity.

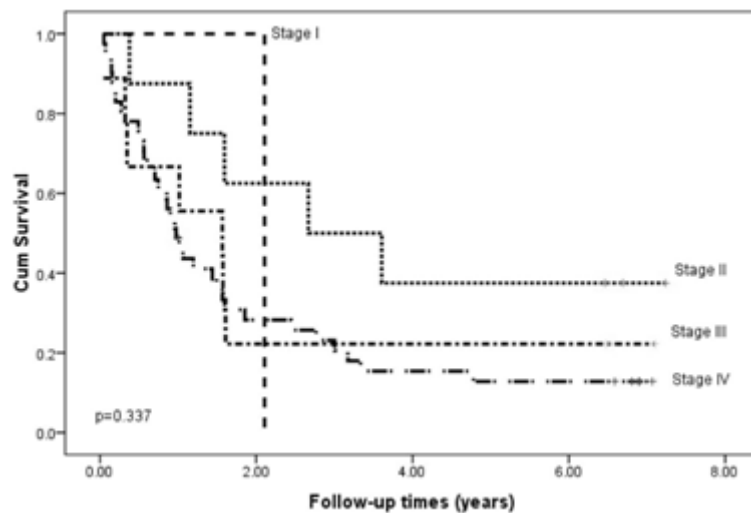


Figure 4. Overall survival by staging of cancer of the nasopharynx cancer patients.

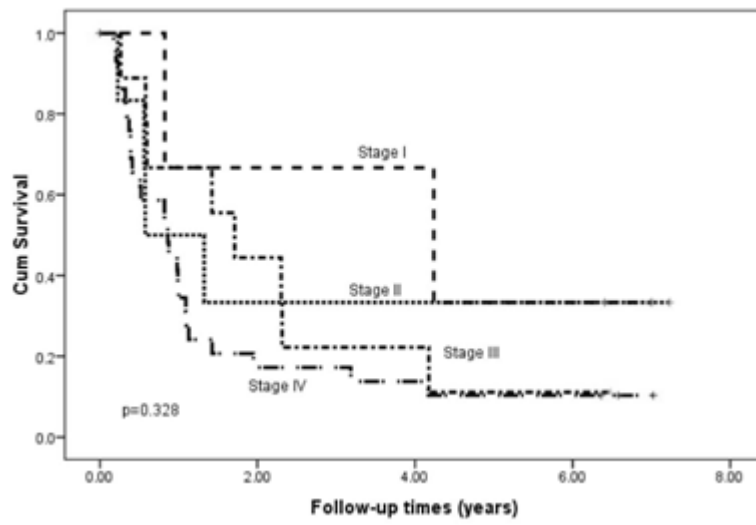


Figure 5. Overall survival by stage of disease in the oropharynx cancer patients.

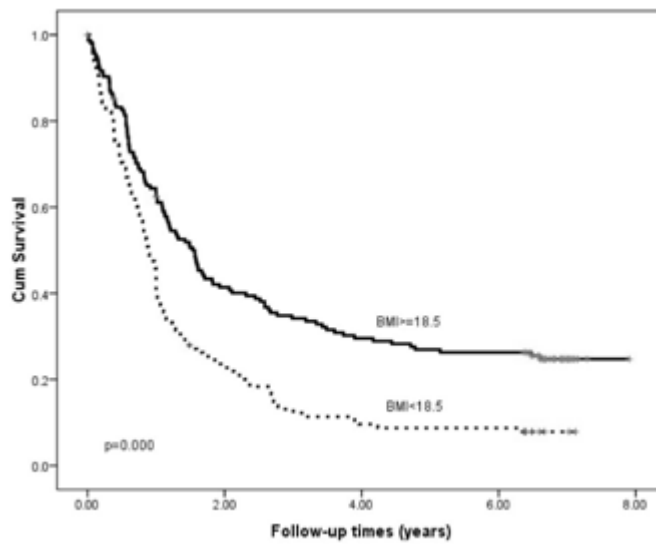


Figure 6. Comparison of overall survival rates, BMI < 18.5 and BMI ≥ 18.5.

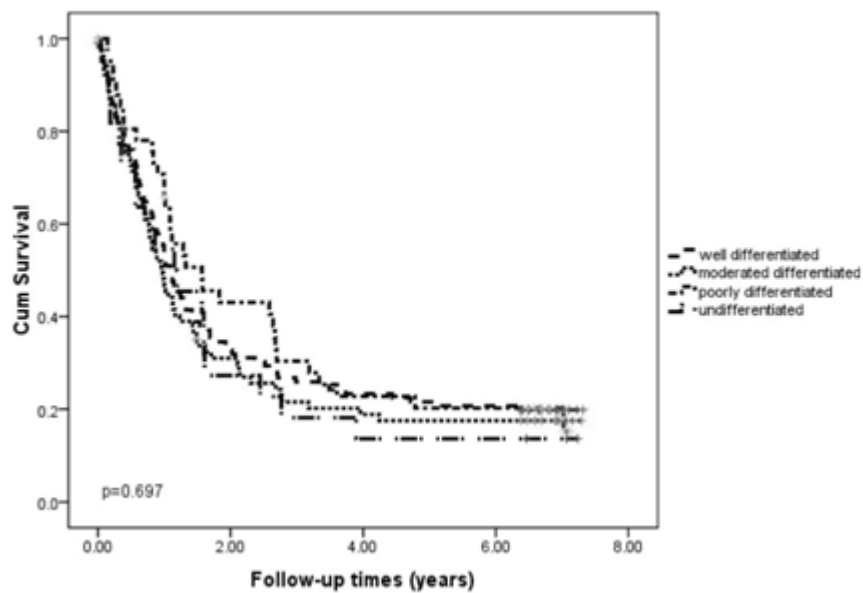


Figure 7. Overall survival by tumor grading.

Discussion

The results have to know the 5-year survival rate of patients with head and neck cancer that all cancer treatment at Lopburi Cancer Center in 2002. It was found that the survival rate of head and neck cancer in early stage is greater than advanced stage, which is based on the hypothesis of no difference from pre-existing standard. Compare the 5 - year survival rates of patients classified by type of disease with the data of the American Joint Committee on Cancer (AJCC).⁽¹⁰⁾

As for the cancer of the oral cavity, 5 - year survival for stage I, II, III and IV were 60%, 46%, 36%, and 23%, respectively.

As for the cancer of the nasopharynx, 5-year survival for stage I, II, III and IV were 56%, 45%, 49%, and 34%, respectively.

As for the cancer of the oropharynx, 5-year survival for stage I,II,III and IV were 50%, 48%, 38%, and 26%, respectively.

Regarding the comparison of 5 - year survival rates, the clinical outcome at Lopburi Cancer Center was still lower than that reported by AJCC, in patients with stage 1-3. This can be explained from the data that the data covers a small number of patients. Outcome is survival of very low standard.

The patients with stage IV treatment also results in lower survival rates than the standard. Also, effectiveness in treatment may be because patients at Lopburi Cancer Center has spread to more patients in the AJCC even in the same stage.

Future studies should cover the data in Thai patients to be more specific to reflect the real problems of each region.

BMI serves as a predictor of patients with a disease. If BMI <18.5kg/m² be classified as patients with lower weight. These patients had poor prognosis, with statistical significance. These are clinically important risk factors of patients with cancer of the head and neck which need more surveillance in this group of patients.

Conclusion

Overall, the prognosis of patients with head and neck cancer was not good. The subgroup of patients who presented with advanced stages of disease and BMI <18.5kg/m² had a poor long-term outcome.

Our future study will study the data from patient survival rates to be compared with the results of this research. It will serve as a better tool to monitor the treatment and care for patients.

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