นิพนธ์ต้นฉบับ . Original Article

การเปรียบเทียบความชุกของภาวะไตวายเฉียบพลันในผู้ป่วยมะเร็งศีรษะและลำคอที่ได้รับการรักษาด้วยเคมีบำบัดร่วมกับรังสีรักษา โดยใช้ยาซิสพลาติน: รูปแบบทุก 3 สัปดาห์ เทียบกับ ทุกสัปดาห์ ณ โรงพยาบาลมหาราชนครราชสีมา

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Comparison of Acute Kidney Injury Prevalence in Head and Neck Cancer Patients Treated with Cisplatin Chemoradiation: 3-week vs 1-week Regimens at Maharat Nakhon Ratchasima Hospital

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บทคัดย่อ

หลักการและวัตถุประสงค์: การรักษาด้วยยาเคมีบำบัดร่วมกับรังสีรักษาด้วยยาซิสพลาติน เป็นการรักษาที่เป็นมาตรฐานในการรักษามะเร็งศีรษะและลำคอ โดยที่จะมีการให้ยาทุกสามสัปดาห์หรือทุกสัปดาห์ โดยมีผลข้างเคียงที่ให้ความสำคัญมากที่สุด ได้แก่ ภาวะไตวายเฉียบพลัน ดังนั้นการศึกษานี้จึงมีวัตถุประสงค์เพื่อเปรียบเทียบความชุกของภาวะไตวายเฉียบพลัน ระหว่างการให้ยาซิสพลาตินแบบทุกสามสัปดาห์และทุกสัปดาห์ ในผู้ป่วยมะเร็งศีรษะและลำคอที่ได้รับเคมีบำบัดร่วมกับรังสีรักษา

วิธีการศึกษา: เป็นการศึกษาเชิงวิเคราะห์จากเหตุไปหาผลแบบย้อนหลังในผู้ป่วยเพศชายและหญิงที่มีอายุตั้งแต่ 18 ปีขึ้นไป ซึ่งได้รับการวินิจฉัยว่าเป็นโรคมะเร็งศีรษะและลำคอและได้รับการรักษาด้วยยาซิสพลาตินร่วมกับรังสีรักษา ข้อมูลถูกรวบรวมจากฐานข้อมูลเวชระเบียนอิเล็กทรอนิกส์ของโรงพยาบาลมหาราชนครราชสีมา ระหว่างปี พ.ศ. 2560 ถึง 2566 ภายหลังการรวบรวมข้อมูล ตัวแปรสำคัญ อาทิ ความชุกของภาวะไตวายเฉียบพลันและปัจจัยที่เกี่ยวข้อง จะถูกนำมาวิเคราะห์สถิติด้วยค่า odds ratio พร้อมค่าความเชื่อมั่นร้อยละ 95

ผลการศึกษา: จากประชากรที่ศึกษาทั้งหมด 247 ราย มีผู้ป่วย 32 รายถูกคัดออกด้วยเหตุผลต่างๆ คงเหลือกลุ่มตัวอย่างที่นำมาวิเคราะห์จำนวน 215 ราย โดยแบ่งเป็นกลุ่มที่ได้รับยาทุกสามสัปดาห์ 111 ราย และกลุ่มที่ได้รับยาทุกสัปดาห์ 104 ราย ความชุกโดยรวมของภาวะไตวายเฉียบพลันคิดเป็นร้อยละ 37.21 โดยไม่พบความแตกต่างอย่างมีนัยสำคัญทางสถิติระหว่างกลุ่มที่ได้รับยาทุกสามสัปดาห์ (ร้อยละ 37.80) และทุกสัปดาห์ (ร้อยละ 36.50) (p=0.955) กลุ่มที่ได้รับยาทุกสามสัปดาห์ได้รับปริมาณยาซิสพลาตินสะสมสูงกว่าอย่างมีนัยสำคัญ (173.53 เทียบกับ 140.24 มก./ตร.ม, p <0.001) และผลการวิเคราะห์ความสัมพันธ์ด้วยการถดถอยโลจิสติกแบบพหุตัวแปรพบว่า ปัจจัยเสี่ยงที่สำคัญที่มีนัยสำคัญทางสถิติต่อการเกิดภาวะไตวายเฉียบพลัน ได้แก่ ดัชนีมวลกายที่มากกว่า 23 กิโลกรัมต่อตารางเมตร (OR 2.10, 95% CI 1.02 - 4.30, p=0.043) และระดับครีเอตินินก่อนการให้ยา (OR 15.96, 95% CI 1.97-129.56, p = 0.010)

สรุป: รูปแบบการให้ยาซิสพลาตินทั้งสองแบบแสดงความชุกของภาวะไตวายเฉียบพลันที่ใกล้เคียงกัน ดัชนีมวลกายที่มากกว่า 23 กิโลกรัมต่อตารางเมตร และระดับครีเอตินินที่มากขึ้น สัมพันธ์กับความเสี่ยงที่เพิ่มขึ้นของภาวะไตวายเฉียบพลัน ในการให้ยาในกลุ่มประชากรกลุ่มนี้จึงควรมีการติดตามอย่างใกล้ชิด

คำสำคัญ: มะเร็งศีรษะและลำคอ, ซิสพลาติน, การบาดเจ็บของไตเฉียบพลัน, การทำเคมีบำบัด, พิษต่อไต

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Abstract

Background and Objective: Concurrent chemoradiation with cisplatin is the standard treatment for head and neck cancer, administered either every three weeks or weekly. Cisplatin-induced nephrotoxicity is of significant concern. This study aimed to compare the prevalence of acute kidney injury (AKI) between triweekly and weekly cisplatin regimens in patients with head and neck cancer who underwent concurrent chemoradiotherapy.

Methods: This study was a retrospective cohort analysis of male and female patients over 18 years of age who had head and neck cancer and received concurrent cisplatin chemotherapy and radiotherapy. Data were obtained from the medical records database of Maharat Nakhon Ratchasima Hospital from 2017 to 2023. After collecting all data, essential data, such as acute kidney injury rate and related factors, will be analyzed statistically.

Results: Of the 247 patients included in the study, 32 were excluded for various reasons. The remaining 215 cases were comprised of 111 cases of the triweekly regimen and 104 cases of the weekly regimen. The overall prevalence of AKI was 37.21%, with no significant difference between the triweekly (37.80%) and weekly (36.50%) groups (p=0.955). The triweekly group received higher cumulative cisplatin doses (173.53 vs. 140.24 mg/m², p<0.001). Multivariable logistic regression identified body mass index (BMI) > 23 kg/m^2 (OR 2.10, 95% CI 1.02 - 4.30, p=0.043) and baseline creatinine as the significant risk factors for AKI (OR 15.96, 95% CI 1.97-129.56, p = 0.010).

Conclusion: Both cisplatin regimens showed similar prevalence rates of AKI. BMI > 23 kg/m^2 and baseline creatinine were associated with an increased risk of AKI. Careful monitoring is recommended..

Keywords: head and neck cancer, cisplatin, acute kidney injury, chemoradiation, nephrotoxicity

Introduction

Head and neck cancer is a significant global health concern, with over 700,000 new cases reported annually worldwide[1,2]. In Thailand, it ranks among the top five cancers in both men and women, with an age-adjusted incidence rate of 15.6/100,000 for males and 12.1/ 100,000 for females[3]. The economic burden is substantial, with an estimated 691 million baht spent on treatment, averaging 26,556 baht per hospital admission[4]. Current treatment protocols for head and neck cancer typically involve concurrent chemoradiation with cisplatin as a standard chemotherapeutic agent. Two common regimens were used: the conventional triweekly regimen of 100 mg/m² triweekly for 2-3 cycles and an alternative weekly regimen of 40 mg/m² weekly for 5-7 cycles.

From a recent non-inferiority study conducted in Japan, the overall survival is non-inferior comparing between triweekly and weekly regimens with HR of 0.69 (0.37 – 1.27, non-inferiority border at 1.32), which aligned with the meta-analysis that the OS is not a significant difference between two regimens[5,6]. Although both cisplatin regimens have shown similar efficacies in disease control, there are concerns about cisplatin-induced nephrotoxicity which is occurred around 30-40%. Cisplatin can cause kidney damage through various mechanisms, including cellular toxicity, vasoconstriction, proinflammatory effects, and direct effects on proximal tubules[7]. Several studies have described the clinical features associated with the risk of acute kidney injury (AKI), including chemotherapy-induced nausea and vomiting, cirrhosis, and hypertension[8–10]. These effects can lead to AKI, potentially prolonging the hospital stay and increasing treatment costs. At the Maharat Nakhon Ratchasima Hospital, both cisplatin regimens are used; however, there is limited data on the prevalence of AKI associated with each regimen.

This study aimed to compare the AKI rates between the two cisplatin regimens and identify the potential risk factors for cisplatin-induced nephrotoxicity in patients with head and neck cancer. By providing valuable insights into the renal safety profiles of these regimens, this study seeks to inform treatment decisions and improve patient care, ultimately helping clinicians balance the efficacy of cancer treatment with the risk of renal complications.

Methods

Study Design and Population

This retrospective cohort study was conducted at the Maharat Nakhon Ratchasima Hospital. The study included male and female patients aged ≥ 18 years who were diagnosed with head and neck cancer (ICD-10 codes C00-C14 and C30-C32) and received cisplatin-based concurrent chemoradiation between 2017 and 2023. Patients who had incomplete medical records, had recurrent disease, or had previously received cisplatin-containing regimens were excluded. The patients were divided into two groups based on their cisplatin regimen: the triweekly regimen group received 100 mg/m² triweekly, whereas the weekly regimen group received 40 mg/m² weekly. All the patients must have creatinine levels at the baseline and within 7 days after initiating chemotherapy. The study protocol was approved by the Maharat Nakhon Ratchasima Hospital Institutional Review Board (MNRH IRB) (Protocol No. 66088, COA no. 116/2023) and registered in the Thai Clinical Trial Registry (TCTR Reg. no. TCTR20241009005).

Outcomes

The primary outcome of the study was the prevalence of AKI, defined according to the AKIN criteria[11]: an increase in serum creatinine by ≥ 0.3 mg/dL within 48 hours, an increase in serum creatinine to ≥1.5 times baseline within 7 days, or urine output <0.5 mL/kg/h for 6 hours. The exploratory outcomes included composite renal outcomes involving electrolyte imbalances - defined by sodium level below 135 mEq/L or potassium level below 3.5 mEq/L – proteinuria, which shows positive on the urine dipstick, and any dose reduction or delay events.

Data Collection

Data were extracted from the electronic medical records of the hospitals. The collected information included demographics, medical history, cancer diagnosis and stage, treatment details, laboratory results, chemotherapy dosing, adverse events, and dose adjustments. Study data were collected and managed using REDCap electronic data capture tools hosted at the Medical Education Center of Maharat Nakhon Ratchasima Hospital[12,13]. Research Electronic Data Capture (REDCap) is a secure, web-based software platform designed to support data capture for research studies, providing 1) an intuitive interface for validated data capture, 2) audit trails for tracking data manipulation and export procedures, 3) automated export procedures for seamless data downloads to standard statistical packages, and 4) procedures for data integration and interoperability with external sources.

Sample Size

The sample size for this study was determined using G*Power 3.1.9.7 software[14,15], based on findings from previous studies[5,9,16]. These studies reported an prevalence of AKI of 53% in the triweekly regimen group and 33% in the weekly regimen group. Utilizing these parameters and assuming a 95% confidence level (α = 0.05) and 80% power (β = 0.20), the calculation yielded the required sample size of 108 patients per group. An additional 10% was added to this figure to account for potential data issues or participant attrition. Consequently, the total target sample size for the entire study was 240 patients, with 120 patients in each treatment group. If the number of eligible patients in the retrospective data exceeded the required sample size, block systematic sampling was planned.

Statistical Analysis

Statistical analysis was performed using descriptive statistics for demographic and clinical characteristics. Comparisons between the two treatment groups were performed using the t-test to compare continuous data and the chi-square test for comparing categorical data. To identify the risk factors for AKI, both univariable and multivariable binary logistic regression analyses were performed, and the results were presented as odds ratios (OR) and 95% confidence intervals (CI). Statistical significance was set at $p < 0.05$.

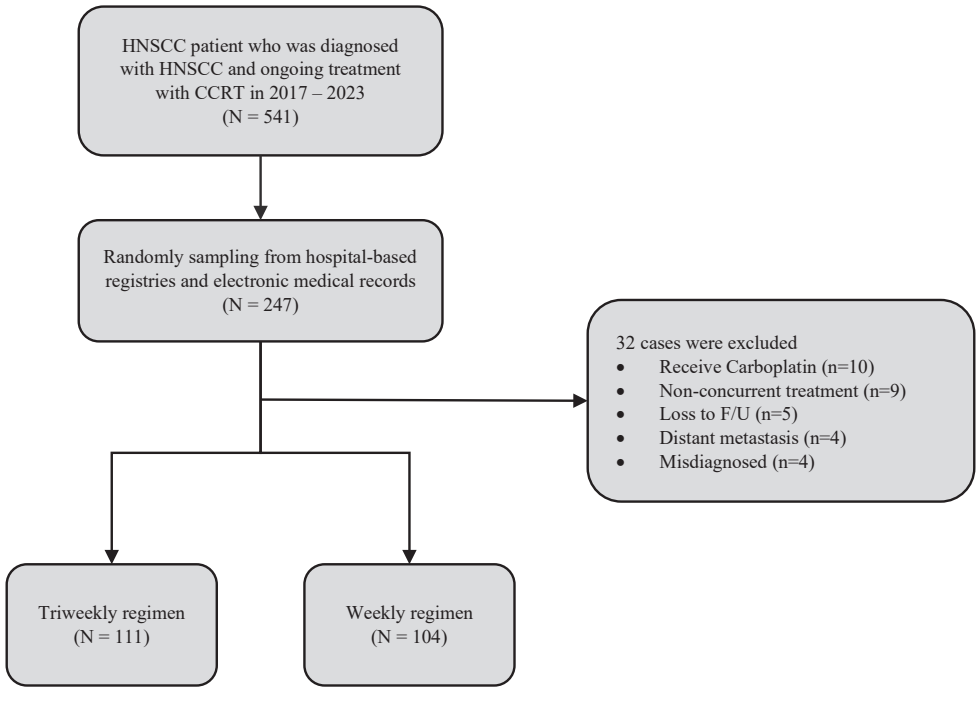

Figure 1 CONSORT diagram

Results

This study initially identified 541 eligible patients with head and neck cancer who received cisplatin-based concurrent chemoradiation. Using Computer-Assisted Blocked systematic sampling with a fixed selection ratio, 247 patients were included in the study. After excluding 32 patients for various reasons, such as loss to follow-up, advanced-stage disease, or misdiagnosis, the final study population consisted of 215 patients. These patients were divided into two groups: 111 in the triweekly cisplatin group and 104 in the weekly cisplatin group, as detailed in Figure 1.

The baseline characteristics were minimally different between the two groups. The triweekly group had a mean age of 51.86 years, whereas the weekly group had a mean age of 53.16 years. Both groups were predominantly male, although the proportion was higher in the triweekly group (85.59% vs. 71.15%). The triweekly group had a slightly higher mean BMI (20.87 kg/m² vs 19.63 kg/m²) and body surface area (1.60 m² vs 1.51 m²). Comorbidities were similarly distributed between the two groups, with hypertension being the most common (17.12% vs. 11.54% in the triweekly and weekly groups, respectively). The detailed characteristics are shown in Table 1.

Table 1 Baseline characteristics

	Weekly Protocol 104 patients N (%)	Triweekly Protocol 111 patients N (%)	p-value
Male	74 (71.15)	95 (85.59)	0.016*
Age, Mean ± SD	53.16 ± 9.45	51.86 ± 8.69	0.292
Weight, Mean ± SD	51.42 ± 12.31	56.30 ± 12.01	0.004*
Body Mass Index (BMI) , Mean ± SD	19.63 ± 4.93	20.87 ± 4.25	0.048*
Body Surface Area (BSA), Mean ± SD	1.51 ± 0.18	1.60 ± 0.18	0.001*
Underlying Diseases			
- Hypertension	12 (11.54)	19 (17.12)	0.332
- Diabetes Mellitus	10 (9.62)	7 (6.31)	0.518
- Dyslipidemia	7 (6.73)	2 (1.80)	0.144
Performance Status (ECOG 0-1)	102 (98.08)	108 (97.30)	1.000
Tumor Location			< 0.001*
- Nasopharyngeal Carcinoma	15 (14.42)	43 (38.74)	
- Oropharyngeal Carcinoma	22 (21.15)	31 (27.93)	
- Hypopharyngeal Carcinoma	19 (18.27)	13 (11.71)	
- Oral Cavity Carcinoma	44 (42.31)	21 (18.92)	
- Other Carcinomas	4 (3.84)	3 (2.70)	

Table 1 Baseline characteristics (Cont.)

	Weekly Protocol 104 patients N (%)	Triweekly Protocol 111 patients N (%)	p-value
Disease Stage			0.512
- Stage 1	3 (2.88)	1 (0.90)	
- Stage 2	13 (12.50)	11 (9.91)	
- Stage 3	29 (27.88)	27 (24.32)	
- Stage 4	59 (56.73)	72 (64.86)	
History of Herbal Medicine Use	0 (0)	1 (0.91)	1.000
History of NSAID Use	0 (0)	1 (0.91)	1.000
History of ACEI/ARB Use	1 (0.96)	2 (1.80)	1.000
History of Opioid Use	0 (0)	1 (0.90)	1.000
Creatinine Clearance			
- CrCl by Cockcroft-Gault (Mean ± SD)	81.64 ± 22.49	87.46 ± 22.07	0.058
- CrCl by CKD-EPI Thai (Mean ± SD)	108.30 ± 23.04	108.42 ± 21.94	0.967
Cumulative dose of Cisplatin, Mean ± SD	140.24 ± 62.63	173.53 ± 56.44	<0.001*

* Indicated significant at $p < 0.05$

Regarding the dose of treatment, there was a significant difference in the cumulative cisplatin dose received by the two groups. The triweekly group received a significantly higher mean cumulative cisplatin dose of 173.53 mg/m² compared to 140.24 mg/m² in the weekly group (p<0.001).

The primary outcome of the study was the prevalence of AKI, which showed no statistically significant difference between the two groups. The overall prevalence of AKI was 37.21%. In the group that received treatment triweekly, the AKI rate was 37.80%, whereas in the weekly treatment group, it was 36.50% (p=0.955).

The exploratory outcomes also showed no significant differences between the two groups. In the triweekly group, composite renal outcomes were observed in 45.10% of the patients, whereas in the weekly group, composite renal outcomes were observed in 39.40% (p=0.487). Dose reductions were required for 41.40% of patients in the triweekly group and 36.50% in the weekly group (p=0.551). Treatment delays or dose modifications due to side effects occurred more frequently in the triweekly group (69.40%) than in the weekly group (57.70%); however, this difference was not statistically significant (p=0.121) (Table 2).

Analysis of the risk factors for AKI revealed interesting findings. In the univariable analysis, both BMI > 23 kg/m^2 (OR 2.66 95% CI 1.41-5.03, p = 0.010) and baseline creatinine level (OR 19.61 95% CI 3.15-121.93, p = 0.001) were significantly associated with AKI. Furthermore, the multivariable analysis, which accounted for confounding variables, indicates that BMI > 23 kg/m^2 and baseline creatinine remain crucial risk factors for AKI. (OR 2.10, 95% CI 1.02 - 4.30, p=0.043 and OR 15.96, 95% CI 1.97-129.56, p = 0.010 respectively) (Table 3).

Table 2 Rate of acute kidney injury and other exploratory findings.

	Weekly Protocol 104 patients N (%)	Triweekly Protocol 111 patients N (%)	p-value
Acute kidney injury	38 (36.50)	42 (37.80)	0.955
Composite renal outcome[†]	41 (39.40)	50 (45.10)	0.487
Dose Reduction	38 (36.50)	46 (41.40)	0.551
Dose delay or postpone	60 (57.70)	77 (69.40)	0.121

[†] Composite renal outcomes involving electrolyte imbalances - defined by sodium level below 135 mEq/L or potassium level below 3.5 mEq/L – proteinuria, which shows positive on the urine dipstick, and any dose reduction or delay events

Table 3 Logistic regression analysis of factors associated with Acute Kidney Injury

	Univariable		Multivariable	
	OR (95% CI)	p-value	OR (95% CI)	p-value
Ever-3-week regimen	1.26 (0.73-2.17)	0.405	1.03 (0.56-1.91)	0.917
Male	1.06 (0.54-2.04)	0.874	0.85 (0.39-1.84)	0.673
Age ≥ 70 Years	1.37 (0.08-22.14)	0.826	1.24 (0.07-23.24)	0.887
Diabetes Mellitus	1.23 (0.46-3.33)	0.681	1.74 (0.52-5.81)	0.368
Hypertension	1.55 (0.72-3.33)	0.260	1.40 (0.57-3.47)	0.462
Dyslipidemia	0.67 (0.16-2.76)	0.579	0.35 (0.06-1.90)	0.223
BMI > 23 kg/m^2	2.66 (1.41-5.03)	0.003*	2.10 (1.02-4.30)	0.043*
ECOG group	0.91 (0.15-5.54)	0.915	1.20 (0.19-7.66)	0.848
Creatinine level at Initiation	19.61 (3.15-121.93)	0.001*	15.96 (1.97 – 129.56)	0.010*
Cisplatin cumulative dose	1.00 (0.99-1.01)	0.899	1.00 (0.99-1.00)	0.655

* Indicated significant at $p < 0.05$

Discussion

This study compared the prevalence of AKI and overall renal outcomes in patients with head and neck cancer receiving concurrent chemoradiation with two different cisplatin regimens: weekly (40 mg/m²) and triweekly (100 mg/m²).

Regarding patient characteristics, although most baseline characteristics were similar between the two groups, however, we observed some notable differences. The weekly group had a lower proportion of male patients (71.15% vs. 85.59%) and fewer nasopharyngeal cancer cases (14.42% vs. 38.74%) but more oral cavity cancer cases (42.31% vs. 18.92%) than the triweekly group. The major reason may be the selection bias of the physician. Patients with oral cavity cancer tend to be malnourished and look more frail than those with other head and neck diseases, leading to physician preference to prescribe an alternative weekly regimen, which is easier to withhold or delay chemotherapy sessions. Despite these differences, the radiation doses and planned

chemotherapy dosages for these cancer types were similar, suggesting that these variations were unlikely to significantly impact the AKI rates observed in our study.

The primary objective of this study was to compare the prevalence of AKI between patients with head and neck cancer receiving cisplatin-based concurrent chemoradiation and the standard triweekly regimen with the weekly regimen. The overall AKI rate in our study (37.21%) was lower than that reported in previous studies such as van der Vorst et al.[9] The findings of this study revealed no statistically significant difference in the AKI rates between the two groups (37.80% in the triweekly group vs. 36.50% in the weekly group; p=0.955). This result aligns with those of previous studies by Kiyota et al.[5] and Fayette et al.[16], who also found no significant difference in AKI rates between these two regimens. This may be due to several reasons, such as a lower cumulative dose of cisplatin, hydration strategies, and underpowered statistics.

The first reason is the cumulative dose of cisplatin that was administered. Previous data have shown that cisplatin nephrotoxicity is dose-dependent[7], and most triweekly regimen data usually have cumulative doses that exceed 200 mg/m²[5,17,18]. In our study, the mean cumulative dose in both groups was < 200 mg/m². This lower cumulative exposure may have mitigated the nephrotoxic effects of cisplatin, potentially explaining the lack of a significant difference in AKI rates between the weekly and triweekly regimens. The next reason was the hydration strategy. The lower rate in the triweekly group might be attributed to better patient monitoring and pre-treatment hydration protocols in our hospital. The protocol contains the hydration of crystalloids over 4 liters in 2 days for patients who receive every 3-week regimen, which should be adequate to overcome the toxicity. The last reason is statistics. Our sample size calculation was based on higher expected AKI rates, particularly in the triweekly group. The lower observed rate, while potentially reflecting improved supportive care practices, may have reduced our ability to detect a true difference between regimens if one exists.

Our analysis of risk factors for AKI yielded an important finding: BMI and baseline creatinine level were identified as the significant independent risk factors for AKI in the multivariable analysis. This result differs from previous studies that identified factors such as hypertension, diabetes, and age as significant risk factors[8–10], but BMI did not. This discrepancy may be due to differences in the study populations, treatment protocols, or other confounding factors not accounted for in our analysis. The correlation between elevated BMI and heightened AKI risk may result from increased BMI leading to a larger chemotherapeutic dosage due to a raised BSA, especially in those overweight (BMI over 23 kg/m²), which shows increases the odds twofold (OR 2.10, 95% CI 1.02 - 4.30, p=0.043). Therefore, the previously mentioned relationship indicates that close surveillance and possible dosage adjustments may be required for individuals with elevated BMI.

While the analysis determined BMI as the significant independent risk factor for acute kidney injury, baseline creatinine demonstrated a robust connection with AKI in univariable analysis (OR 19.61, 95% CI 3.15–121.93, p = 0.001) and showed significance in the multivariable model also (OR 15.96, 95% CI 1.97-129.56, p = 0.010). This is the strongest factor in the model that correlates with the clinical use of cisplatin, which requires checking that the creatinine clearance is more than 60 ml/min. Therefore, baseline creatinine holds clinical significance, necessitating vigilant monitoring in chemotherapy patients to evaluate the risk of AKI more precisely.

Despite nephrotoxicity, our study found that the triweekly group received a significantly higher mean cumulative cisplatin dose (173.53 mg/m² vs 140.24 mg/m², p<0.001), which is consistent with the results of several studies[5,17–19]. This difference may be attributed to a selection bias during treatment. We observed that patients who appeared frail were often prescribed a weekly regimen, which allowed for more frequent assessment and dose adjustment. Weekly cisplatin tends to have lower composite renal outcomes and dose reduction or dose delay, which are mainly caused by treatment complications, such as oral mucositis, nausea, and vomiting. Owing to the out-of-study aim, the efficacy of this treatment has not been reported, which requires further exploration in the future.

This study had several limitations that should be considered. As this was a retrospective study, it was subject to inherent biases and limitations in the data collection. Potential risk factors for AKI may not have been recorded in the medical records. Additionally, the decision to use the weekly or triweekly regimen was not randomized, which could have introduced a selection bias. Furthermore, some patients received induction chemotherapy before concurrent chemoradiotherapy, which may have influenced their renal function before the study period.

Despite these limitations, our study provides valuable insights into the renal safety profiles of weekly and triweekly cisplatin regimens in patients with head and neck cancer. The similar AKI rates between the two regimens, despite the difference in cumulative doses, suggest that both approaches are viable. The identification of BMI as a significant risk factor for AKI emphasizes the need for personalized risk assessment and monitoring of cisplatin-based chemoradiotherapy.

Future research could include prospective randomized trials to further validate these findings, as well as studies investigating strategies to mitigate cisplatin-induced nephrotoxicity, particularly in patients with a higher BMI. Additionally, long-term follow-up studies could provide insights into the potentially lasting effects of these treatment regimens on renal function and overall patient outcomes.

Conclusion

A study of head and neck cancer patients receiving concurrent chemoradiation with cisplatin at Maharat Nakhon Ratchasima Hospital revealed an overall AKI prevalence of 37.21%, with no statistically significant difference between the triweekly and weekly regimens. Analysis of the risk factors for AKI showed that when considered individually, both BMI and initial creatinine levels were significantly associated with AKI occurrence. These findings suggest that while both cisplatin regimens have similar renal safety profiles, BMI and creatinine level are the crucial factors to consider when assessing AKI risk in this patient population.

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