

GENDER DIFFERENCES IN CHEMOTHERAPY-INDUCED ALOPECIA DISTRESS USING THE JAPANESE VERSION OF THE CHEMOTHERAPY-INDUCED ALOPECIA DISTRESS SCALE (CADS-J)

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Background

✓ Chemotherapy-induced alopecia (CIA) is one of the most important concerns of cancer patients.

• There have been few studies on patients with cancers other than breast cancer or patients including men.

✓ The CADS (Chemotherapy-induced Alopecia Distress Scale) was reported in 2014 as a patient-reported outcome module to assess the quality of life of patients with cancer¹⁾. This test paper is a 4-module, 17-question with a max of 51 points.

✓ The CADS-J was created in Japan in 2023²⁾.

✓ The objective of this study is to examine gender differences in distress of CIA in Japanese cancer patients using CADS-J.

	Number of questions	Content of questions
Physical	2	Itching and pain at the site of hair loss
Emotional	6	Feeling different, dissatisfaction with appearance, anxiety about the future, stress, depressed mood, loneliness
Activity	6	Difficulty washing hair, limited leisure time, awareness of being sick, hesitant to go shopping, wearing wigs
Relationship	3	Anxiety about relationships with family and friends, relationships with partners and sexual relationships with partners

Patients and methods

✓ A prospective questionnaire study was conducted at Toranomon Hospital and Yokohama Minami Kyosai Hospital from March 2023 to December 2023.

• Subjects had to be:

1. Eighteen years of age or older.
2. Never experienced chemotherapy-induced alopecia in the past and have chemotherapy-induced alopecia currently.
3. Obtained written consent.

• The degree of chemotherapy-induced alopecia was not limited to any degree, but the coexistence of non-chemotherapy-induced alopecia was allowed. Combination chemotherapy with molecularly targeted agents or immune checkpoint inhibitors was allowed.

• Methods for assessing the degree of alopecia are Dean scale and CTCAE, were used to assess patients' alopecia.

✓ Questionnaires were distributed to 104 people, and valid responses were received from 97 (response rate was 93.2%).

Statistical analysis

- T-test, Fisher's exact test, and multivariate analysis with linear regression.
- The statistical software was SPSS.
- The six variables for multivariate analysis were gender, age, CTCAE scale, wearing a wig/hat, working status, and depression, based on previous studies.

Results

Table 1. Patient characteristics

Characteristics		Male (n=55, 56.7%)	Female (n=42, 43.3%)	p-value			
Age, years, mean (SD) (total 62.6, SD=12.7)		64.0 (13.2)	60.7 (12.1)	0.20			
Setting	Metastatic	51 (92.7%)	21 (50%)	<0.001			
	Perioperative	4 (7.3%)	21 (50%)				
Regimen	Taxane	28 (50.9%)	28 (66.7%)	0.091			
	Irinotecan	15 (27.3%)	4 (9.5%)				
	Others	12 (21.8%)	10 (23.8%)				
Degree of hair loss	Dean	1	9 (16.4%)	1 (2.4%)	0.015		
		2	7 (12.7%)	1 (2.4%)			
		3	8 (14.5%)	5 (12.0%)			
		4	31 (56.4%)	35 (83.3%)			
	CTCAE	1	16 (29.1%)	2 (4.8%)	0.0030		
		2	39 (70.9%)	40 (95.2%)			
		Previous hair loss before chemotherapy					0.077
		None	23 (41.8%)	26 (62.0%)			
	Slight	27 (49.1%)	11 (26.2%)				
	Significant	5 (9.1%)	5 (12.0%)				
Wearing a wig/hat				<0.001			
	No	31 (56.4%)	1 (2.4%)				
	Yes	24 (43.6%)	41 (97.6%)				
Working status				1.00			
	Working	13 (23.6%)	9 (21.4%)				
	Retired/housewife/leave of absence	42 (76.4%)	33 (78.6%)				
Monthly family income				0.18			
	Less than 3 million yen	18 (35.3%)	7 (17.5%)				
	3-6 million yen	15 (29.4%)	14 (35.0%)				
	More than 6 million yen	18 (35.3%)	19 (47.5%)				
Marital status				0.50			
	Married	38 (69.1%)	10 (23.8%)				
	Single/Separated	17 (30.9%)	32 (76.2%)				
Education				0.66			
	High school graduate	15 (27.3%)	14 (33.3%)				
	More than college	40 (72.7%)	28 (66.7%)				
Religion				0.055			
	None	31 (59.6%)	32 (80.0%)				
	Buddhism	18 (34.6%)	8 (20.0%)				
	Others	3 (5.8%)	0 (0%)				
Depression				0.84			
	CES-D <16	34 (61.8%)	27 (64.3%)				
	CES-D ≥16	21 (38.2%)	15 (35.7%)				

- There was a significant difference between male and female patients in the metastatic setting.
- The degree of alopecia was more severe in females than in males.
- Women were significantly more likely to require a wig/ hat due to hair loss.

Limitations

- ✓ ① In comparing gender differences, the number of women was smaller. Most of the female patients were in the perioperative period of breast cancer, resulting in Dean grade 4 and CTCAE grade 2 alopecia, and there were gender differences in the severity of alopecia.
- ✓ ② The results showed about 10% of patients with hair loss in the domain of "Relationship." We had told them to fill in this domain if they had a partner at the time of distribution, but the domain was missing if they did not have a partner or did not wish to fill in the domain.

Discussions

- ✓ This is the first study to quantitatively and qualitatively assess CIA distress and compare gender differences.
- ✓ A certain number of men in this study had distress associated with hair loss.
- There are multiple male-specific issues related to chemotherapy-induced hair loss. Interviews with male and female breast cancer patients⁴⁾ reported that men were forced to reveal their hair loss status while women were able to conceal their hair loss. In addition, interviews with men and women who experienced chemotherapy-induced hair loss in the United Kingdom⁵⁾ indicated that only women were encouraged by others to prevent or disguise their hair loss.
- ✓ In the future, it will be necessary to use CADS and other tools for reporting patient-reported outcomes to disaggregate patients' hair loss distress, identify points for further intervention in hair loss distress, and provide appropriate intervention for men as well.

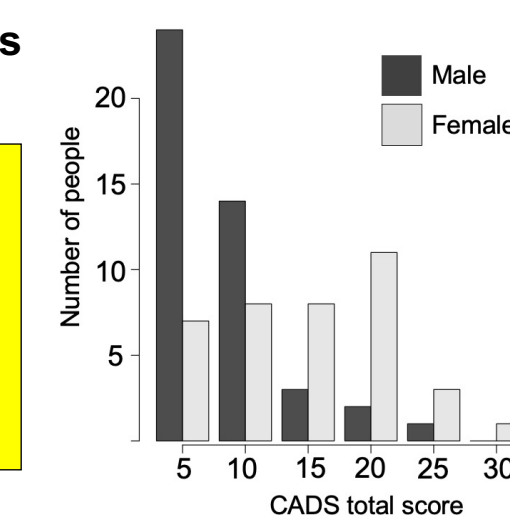
Table 2. Gender differences in CADS physical mean, emotional, activity, relationship, and total score

	Male	Female	p-value
CADS physical mean (SD) (Male 55 (100%), Female 42 (100%))	0.27 (0.53)	0.81 (1.17)	0.0032
CADS emotional mean (SD) (Male 55 (100%), Female 42 (100%))	2.25 (2.16)	4.86 (3.61)	<0.001
CADS activity mean (SD) (Male 55 (100%), Female 42 (100%))	3.21 (2.66)	6.38 (3.00)	<0.001
CADS relationship mean (SD) (Male 45 (81.8%), Female 39 (92.9%))	0.25 (0.78)	0.85 (1.29)	0.012
CADS total mean (SD) (Male 45 (81.8%), Female 39 (92.9%))	5.66 (5.31)	13.15 (7.08)	<0.001

- In all domains, women scored significantly higher; the mean was 5.66 vs. 13.15 points.
- 18.2% of women and 7.1% of men were deficient in the relationship domain question.

Figure 1. Histogram of CADS scores for men and women

- The distribution of scores by gender is shown, and although the distribution is more skewed to the right for men than for women, some men felt much more distress than the average score.



- 5/55 (9.1%) men had a CADS total score of 13 (average for women) or higher.
- All had metastatic recurrence, 4 had CTCAE grade 2 hair loss, and 4 wore wigs.
- There was no consistent trend in other background factors.

Table 3. Univariate and multivariate analysis of CADS total score

	Univariate regression coefficient (95%CI)	p-value	Multivariate regression coefficient (95%CI)	p-value
Gender	7.50 (4.78, 10.21)	p=0.00000045	3.46 (0.56, 6.36)	p=0.020
Age	-0.20 (-0.40, -0.0027)	p=0.047	-0.28 (-2.73, 2.17)	p=0.82
CTCAE scale	6.37 (2.69, 10.04)	p=0.00089	0.270 (-3.14, 3.68)	p=0.88
Wearing a wig/hat	8.95 (6.24, 11.66)	p=0.0000000046	6.19 (2.89, 9.49)	p=0.00036
Working status	1.09 (-1.01, 3.20)	p=0.31	1.62 (-1.27, 4.51)	p=0.27
Depression (CES-D ≥16)	6.51 (3.50, 9.51)	p=0.000045	5.62 (3.24, 8.01)	p=0.00012

- Univariate analysis showed that gender, age, CTCAE scale, wearing a wig/hat, and depression were significantly related to CADS total score.
- Multivariate analysis showed that wearing a wig/hat and depression were significantly related to CADS total score.

References

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- 4) Cancer Nurs. 2021 Jan/Feb;44(1):62-70.
- 5) Psychooncology. 2008 Jun;17(6):577-83.