Analysis of the frequency and associated factors of skin toxicity in patients receiving ribociclib-based therapy for metastatic breast cancer

Esther Kim1, Youra Lim1, Ahrong Ham1, Jeong Min Jo1, Se Won Lee1, Hyun Goo Kim2, Jun Woo Lee2, Joo Hyun Woo2, Woo Sung Lim2, Byung In Moon2, Sei Hyun Ahn2, Hye Ah Lee3, **Kyoung Eun Lee1**

1Department of Hematology and Oncology, Ewha Womans University Mokdong Hospital, Ewha Womans University, Seoul, Korea. 2Department of Surgery, Ewha Womans University Mokdong Hospital, Ewha Womans University, Seoul, Korea. 3Clinical Trial Center, Ewha Womans University Mokdong Hospital, Ewha Womans University, Seoul, Korea

Background

- In the treatment of hormonal receptor positive (HR+), HER2 negative (HER2-) metastatic breast cancer (MBC), most guidelines recommend endocrine therapy including CDK4/6 inhibitors as the first-line drug for quality of life
.
- Ribociclib is one of the CDK4/6 inhibitor and has been used with aromatase inhibitors or fulvestrant in HR+, HER2- metastatic breast cancer patient.
- Various drug reactions related with ribociclib has been reported including skin reaction, liver toxicity and hematologic toxicity.
- In this study, we aimed to evaluate clinical manifestations and risk factors of dermatologic toxicities in metastatic breast cancer patients who used ribociclib.

Methods

- This study included the patients with metastatic/recurrent breast cancer who were prescribed ribociclib from April 2021 to December 2024 in our single institution.
- We retrospectively reviewed the medical records of the patients, identified the frequency of recorded skin lesions, the time of occurrence and clinical characteristics of skin reactions.
- Logistic regression analysis was performed with several clinical factors including BSA (body surface area) and concomitant medications to analyze risk factors related to the occurrence of skin lesions.

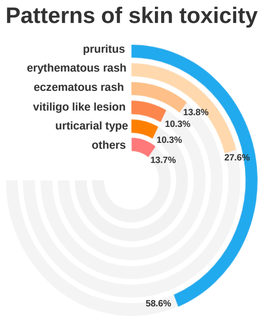
Results

Table 1. Patient Characteristics and Skin Toxicities

	Missing value	Analyzed patients	No. of patient (%)
Age (years)	0	110	53 (28-82)
Menopause	0	110	
No			32 (29.1)
Yes			78 (70.9)
ECOG	0	110	
0			77 (70.0%)
1			30 (27.3%)
2			3 (2.7%)
BSA			
Low			1.45 (±0.06)
Intermediate			1.57 (±0.04)
High			1.74 (±0.10)
Therapy	0	110	
Ribociclib+letrozole			48 (43.6)
Ribociclib+fulvestrant			29 (26.4)
Ribociclib+letrozole +GnRH agonist			33 (30.0)
Disease status	0	110	
De Novo metastatic			46 (41.8)
Recurrent			64 (58.2)
Hypercholesterolemia	3	107	
No			68 (63.6%)
Yes			39 (36.4%)
Taking cholesterol-lowering medication	0	110	
No			88 (80.0%)
Yes			22 (20.0%)

26.4%

Skin toxicity (any grade)



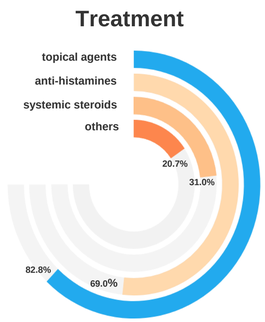


Table 2. Skin toxicity Outcome Summary

	Value
Time to skin reaction (Median, days)	84 (3-498)
Ribociclib dose reduced	6/29 (20.7%)
Drug discontinued due to skin toxicity	1/29 (3.4%)

Table 3. Multivariate logistic regression analysis for dermatologic toxicity

	Multivariate OR (95% CI)	P-value
≥65 yrs	1.75 (0.43-7.06)	0.435
BSA	5.85 (0.24-140.94)	0.277
De Novo metastatic (0)	ref	
Recurrent disease (1)	0.56 (0.21-1.45)	0.230
Therapy		
Ribociclib+letrozole (1)	ref	
Ribociclib+fulvestrant (2)	0.49 (0.14-1.67)	0.252
Ribociclib+letrozole +GnRH agonist (3)	0.62 (0.20-1.90)	0.398
Hyperlipidemia	2.38 (0.79-7.13)	0.122
Taking cholesterol-lowering medication	1.82 (0.67-4.94)	0.238

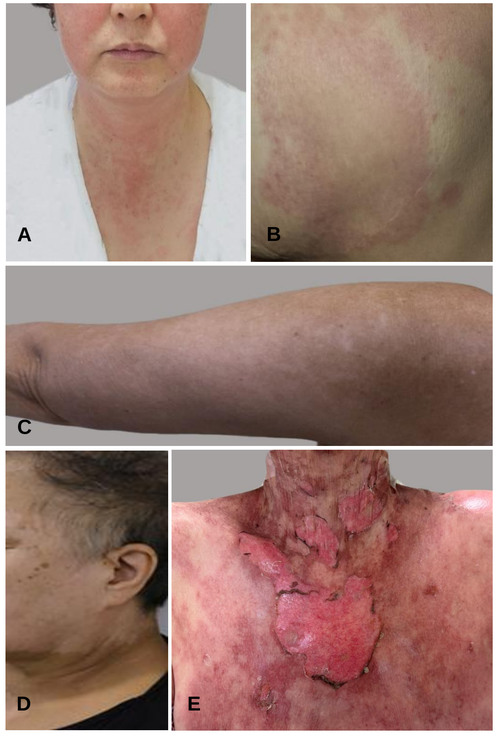


Figure 1. Clinical images of cutaneous adverse events associated with ribociclib.
(A) F/63, erythematous rash on the face and anterior neck. **(B)** F/43, eczematous patch on the left chest. **(C)** F/65, vitiligo-like hypopigmented macules on the left triceps. **(D)** F/65, vitiligo-like hypopigmented macules on the lateral face. **(E)** F/70, severe exfoliative dermatitis with necrosis (TEN)

Conclusions

CDK4/6 inhibitors are one of the important treatments for HR+, HER2- MBC. Regardless of clinical efficacy, skin toxicity is a common cause of patient discomfort. Therefore, detailed clinical attention and supportive cares can improve the patient's quality of life.

Contact

Kyoung Eun Lee. Division of Hematology and Oncology, Department of Internal Medicine, Ewha Womans University Mokdong hospital, Ewha Womans University College of Medicine, Seoul, Republic of Korea. Email: oncolee@ewha.ac.kr

References
1. Sibaud V, Sollena P. Dermatologic toxicities to inhibitors of cyclin-dependent kinases CDK 4 and 6: An updated review for clinical practice. Ann Dermatol Venereol. 2023;150:208–212.