52nd Annual Meeting of Korean Cancer Association

June 25(Thu) - 26(Fri), 2026 I Grand InterContinental Seoul Parnas, Korea

Post hoc analysis of efficacy and safety between US and Korean patients treated with rivoceranib for recurrent or metastatic adenoid cystic carcinoma

Bhumsuk Keam

Seoul National University Hospital and College of Medicine, Seoul, South Korea

Bhumsuk Keam [1], Glenn J. Hanna [2], Myung-Ju Ahn [3], Jameel Muzaffar [4], Deborah J. Wong [5], Daniel W. Bowles [6], Alan L. Ho [7], Sung-Bae Kim [8], Francis Worden [9], Tak Yun [10], Xianzhang Meng [11], Kristin Ryan [11], Hyunseok Kang [12]

1. Seoul National University Hospital and College of Medicine, Seoul, South Korea; 2. Dana-Farber Cancer Institute, Boston, MA, USA; 3. Samsung Medical Center Sungkyunkwan University School of Medicine, Seoul, South Korea; 4. Duke University, Durham, NC, USA; 5. Division of Hematology/Oncology, University of California Los Angeles, Los Angeles, CA, USA; 6. University of Colorado Cancer Center, Aurora, CO, USA; 7. Solid Tumor Oncology Division, Head and Neck Service, Memorial Sloan Kettering Cancer Center, New York, NY, USA; 8. Asan Medical Center, University of Ulsan College of Medicine, Seoul, South Korea; 9. Endocrine Oncology Clinic, University of Michigan, Rogel Cancer Center, Ann Arbor, MI, USA; 10. Rare Cancers Clinic, Center for Specific Organs Cancer, National Cancer Center, Goyang-Si, Gyeonggi-Do, South Korea; 11. Elevar Therapeutics, Fort Lee, NJ, USA; 12. Stanford University, School of Medicine, Palo Alto, CA, USA

COI Disclosure Information

I have financial relationships to disclose.

Consultancy/advisory role: Handok, Trialinformatics, Yuhan, TiumBio, BeOne

Patents and royalties: nothing

Honoraria: MSD, Lily, Merck, LG chem, Novartis

Grant/Research funding: MSD, AZ, Ono, Bayer

Employee: nothing

Other remuneration: nothing

Background

- Recurrent/metastatic (R/M) adenoid cystic carcinoma (ACC) is generally indolent with median survival exceeding 5 years; however, survival is shortened in those with distant metastases outside of the lungs and in those who require treatment within 3 years of R/M diagnosis.[1,2] No systemic treatments are approved for use in R/M ACC in the United States or Europe.

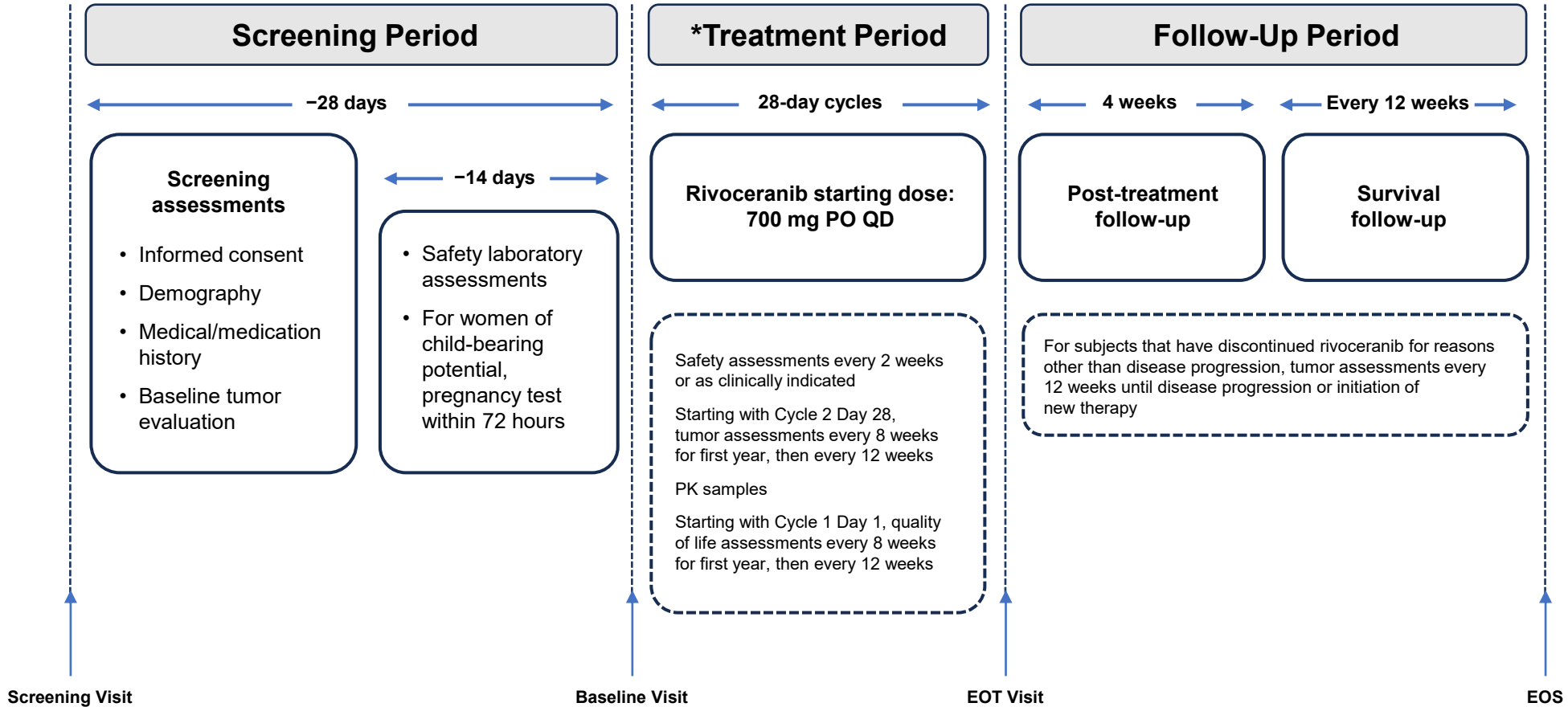
- Rivoceranib (formerly apatinib) is an orally administered tyrosine kinase inhibitor (TKI) that potently and selectively targets VEGFR2.[3,4]

- RM-202 was a single-arm, open-label, multicenter phase 2 trial that evaluated rivoceranib in patients (N=80) with R/M ACC across 11 United States and South Korean sites.[5] Per investigator/BICR: ORR, 15.3%/9.7%; median DOR, 14.9/7.2 months; median PFS, 9.0/9.0 months. The most common grade ≥3 TRAEs were hypertension (42.5%) and stomatitis (7.5%).

- Geographic and ethnic differences in cancer incidence and biology have been documented between Korean and Western populations.[6] The extent to which these differences influence treatment outcomes in ACC is poorly characterized. This post hoc analysis compared efficacy and safety outcomes by geographic region (United States vs Korea), stratified by prior TKI treatment.

1. Hanna GJ, et al. *Oral Oncol.* 2020;106:104690. 2. Cavalieri S, et al. *Eur J Cancer.* 2020;136:35-42. 3. Sachar M, et al. *Fundam Clin Pharmacol.* 2021;35:485-495. 4. Sachar M, et al. *Fundam Clin Pharmacol.* 2022;36:171-181.
5. Hanna GJ, et al. *Clin Cancer Res*. 2023;29(22):4555-4563. 6. Lee J, et al. *Cancer Control*. 2007;14(1):78-85.
ACC = adenoid cystic carcinoma; BICR = blinded independent central review; DOR = duration of response; ORR = objective response rate; PFS = progression-free survival; R/M = recurrent/metastatic; TKI = tyrosine kinase inhibitor; TRAE= treatment-related adverse event; VEGFR2 = vascular endothelial growth factor receptor 2.

RM-202: Single-Arm Phase 2 Study Design



EOS = end of study; EOT = end of treatment; PK = pharmacokinetic; PO = oral; QD = once daily.
Note: Eligibility was confirmed before the subject received the first dose of rivoceranib. Dose modifications and delays were allowed in the event of toxicity.
*Cycles could continue until progression of disease, discontinuation, or EOT.

Post Hoc Subgroup Analysis: United States vs Korean Patients S tratified by Prior TKI Treatment

Analysis Population

- Post hoc subgroup analysis of the RM-202 efficacy evaluable population (N=72) and intent-to-treat population (N=80)
- Patients were stratified by geographic region: United States (n=53) and South Korea (n=27)

Endpoints Assessed

- Primary: ORR
- Key secondary endpoints: PFS, OS, and safety.
- A key exploratory endpoint was DCR.

Subgroup Stratification

- Within each region, patients were further stratified by prior TKI treatment status (TKI-treated vs TKI-naïve)

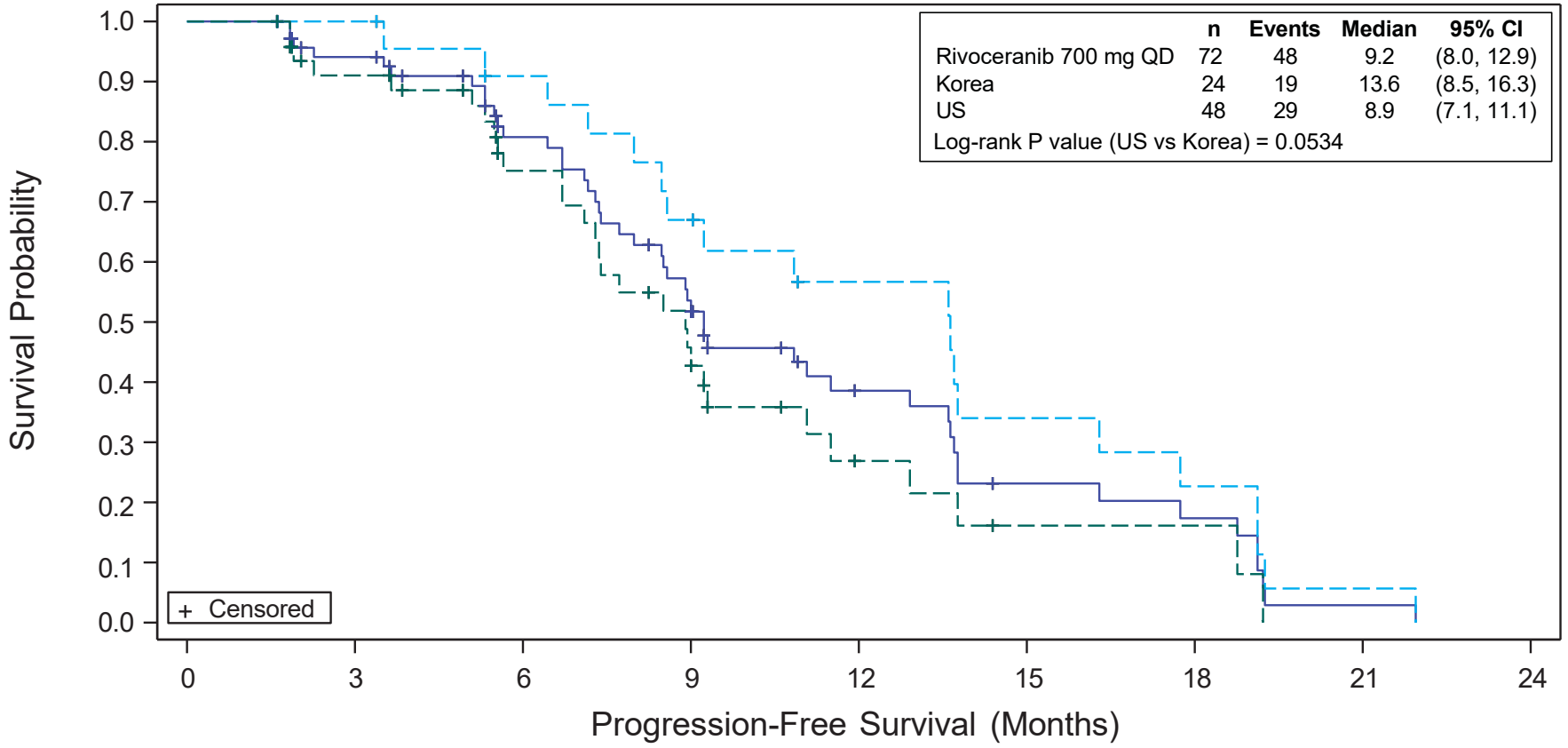
DCR = disease control rate; OS = overall survival; ORR = objective response rate; PFS = progression-free survival; TKI = tyrosine kinase inhibitor.

Baseline Characteristics Were Generally Balanced Between United States and Korean Patients

	US Patients (n=53)	Korean Patients (n=27)
Median age, years (range)	56 (28, 76)	50 (31, 75)
Sex, n (%)		
Male	28 (52.8)	14 (51.9)
Female	25 (47.2)	13 (48.1)
Ethnicity, n (%)		
Hispanic or Latino	7 (13.2)	0
Not Hispanic or Latino	45 (84.9)	27 (100)
Not reported	0	0
Unknown	1 (1.9)	0
Race, n (%)		
American Indian or Alaska Native	0	0
Asian	1 (1.9)	27 (100)
Black or African American	2 (3.8)	0
Native Hawaiian or Other Pacific Islander	0	0
White	47 (88.7)	0
Other	3 (5.7)	0
ECOG PS, n (%)		
0	36 (67.9)	9 (33.3)
1	17 (32.1)	18 (66.7)

ECOG PS = Eastern Cooperative Oncology Group performance status; US = United States.

Korean Patients Showed Numerically Longer PFS by BICR



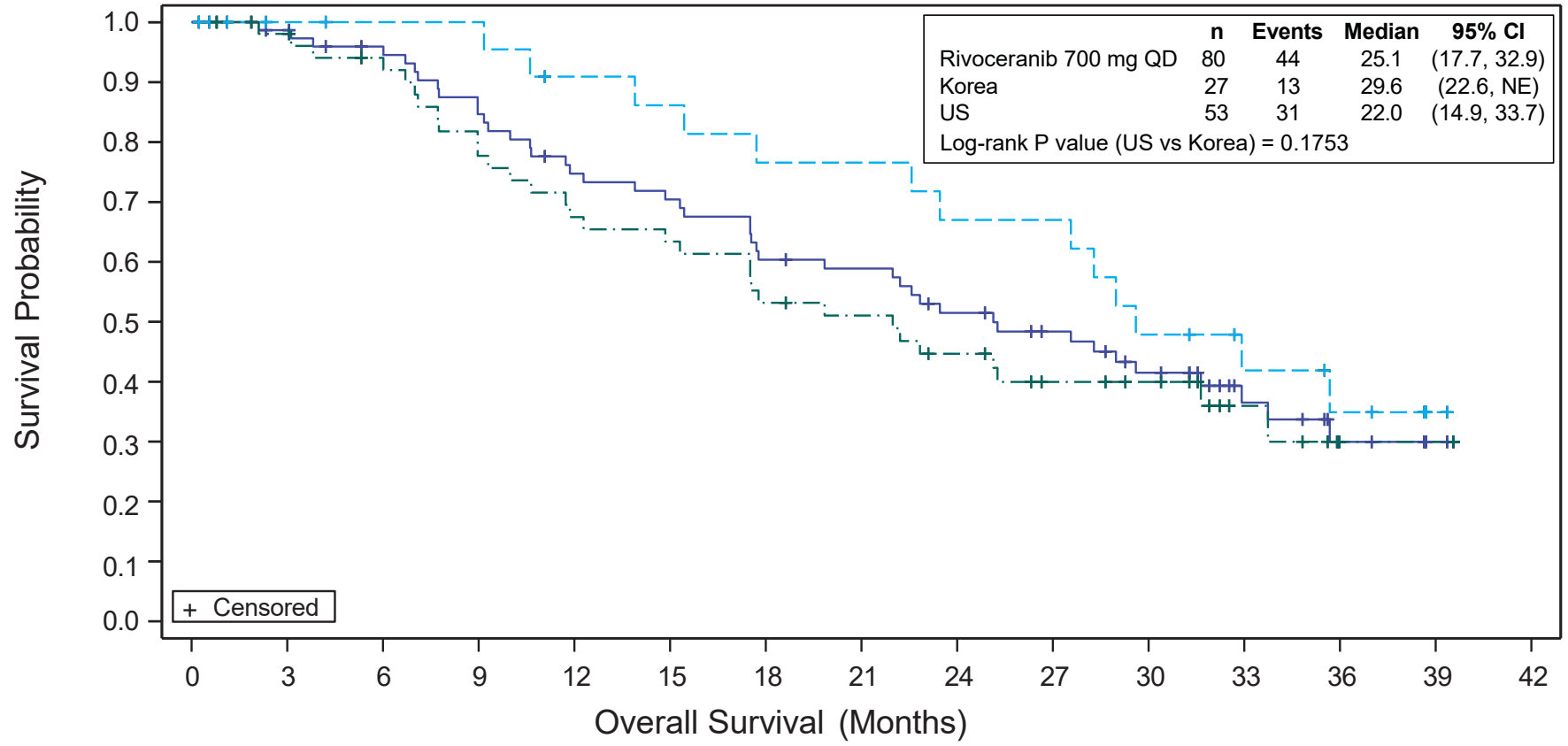
	n	Events	Median	95% CI
Rivoceranib 700 mg QD	72	48	9.2	(8.0, 12.9)
Korea	24	19	13.6	(8.5, 16.3)
US	48	29	8.9	(7.1, 11.1)

Log-rank P value (US vs Korea) = 0.0534

Rivoceranib 700 mg QD	72	61	45	29	15	8	6	1	0
Korea	24	23	19	14	10	6	4	1	0
US	48	38	26	15	5	2	2	0	

BICR = blinded independent central review; QD = once daily; PFS = progression-free survival; US = United States.

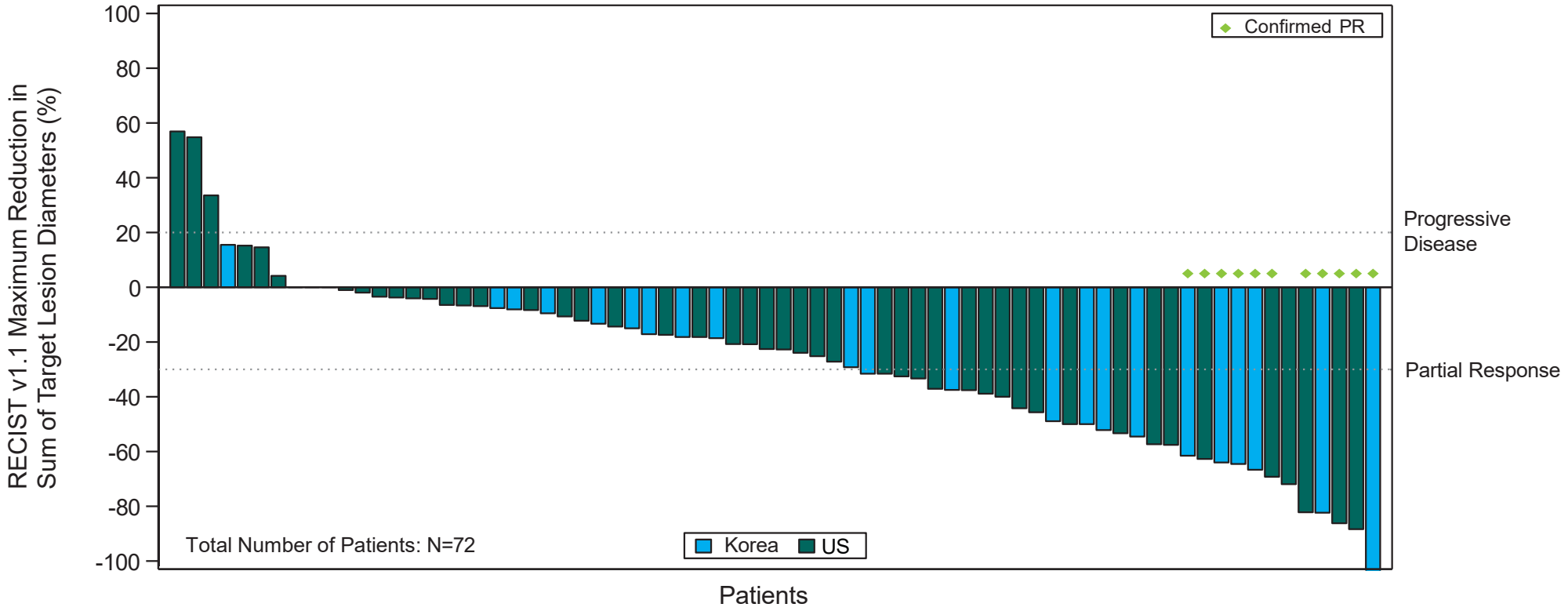
Korean Patients Showed Numerically Longer Overall Survival



Rivoceranib 700 mg QD	80	73	68	60	52	49	42	40	34	29	23	13	6	2	0
Korea	27	23	22	22	19	18	16	16	14	14	10	7	5	1	0
US	53	50	46	38	33	31	26	24	20	15	13	6	1	1	0

NE = not evaluable; QD = once daily; US = United States.

Tumor Reductions Were Observed Across Both Regions



PR = partial response; RECIST v1.1 = Response Evaluation Criteria in Solid Tumors version 1.1; US = United States.

Efficacy Stratified by TKI per BICR

	US Patients (n=48)		Korean Patients (n=24)	
	TKI-treated (n=10)	**TKI-naïve (n=38)**	**TKI-treated (n=3)**	**TKI-naïve (n=21)**
Objective response rate, n (%) [95% CI]	2 (20) [2.5, 55.6]	4 (10.5) [2.9, 24.8]	0 [0, 70.8]	1 (4.8) [0.1, 23.8]
Disease control rate, n (%) [95% CI]	7 (70) [34.8, 93.3]	22 (57.9) [40.8, 73.7]	2 (66.7) [9.4, 99.2]	17 (81.0) [58.1, 94.6]
Total number of PFS events, n (%) Progressive disease Death	6 (60) 5 (50) 1 (10)	23 (60.5) 21 (55.3) 2 (5.3)	3 (100) 3 (100) 0	16 (76.2) 16 (76.2) 0
Median PFS, months [95% CI]	7.3 [1.8, NE]	8.9 [6.7, 11.5]	9.2 [5.3, NE]	13.7 [8.5, 17.7]

Disease control rate and median progression-free survival were numerically higher in TKI-naïve Korean patients vs TKI-naïve US patients.

BICR = blinded independent central review; NE = not evaluable; PFS = progression-free survival; TKI = tyrosine kinase inhibitor; US = United States.

Safety Summary

Event, n (%)	US Patients (n=53)	Korean Patients (n=27)
TEAEs	53 (100)	27 (100)
Grade 3/4/5 TEAEs	43 (81.1)	22 (81.5)
TEAEs related to rivoceranib	53 (100)	26 (96.3)
SAEs related to rivoceranib	16 (30.2)	4 (14.8)
Grade 3/4/5 TEAEs related to rivoceranib	38 (71.7)	18 (66.7)
AEs leading to dose reduction of rivoceranib	18 (34.0)	19 (70.4)
AEs leading to dose interruption of rivoceranib	46 (86.8)	23 (85.2)
AEs leading to discontinuation of rivoceranib	12 (22.6)	6 (22.2)
Median actual dose intensity, mg (range)	420 (203, 700)	266 (121, 700)

Rates of dose reduction were more common in Korean patients vs US patients.
Rates of dose interruption and discontinuation were similar between regions.

AE = adverse event; SAE = serious adverse event; TEAE = treatment-emergent adverse event; US = United States.

TEAEs Related to Rivoceranib With Incidence of ≥20% in Either Arm

Event, n (%)	US Patients (n=53)	Korean Patients (n=27)
Nausea	34 (64.2)	7 (25.9)
Stomatitis	19 (35.8)	20 (74.1)
Diarrhea	21 (39.6)	5 (18.5)
Oral pain	15 (28.3)	1 (3.7)
Vomiting	14 (26.4)	1 (3.7)
Dyspepsia	2 (3.8)	6 (22.2)
Hypertension	38 (71.7)	14 (51.9)
AST increased	15 (28.3)	5 (18.5)
ALT increased	12 (22.6)	5 (18.5)
Weight decreased	15 (28.3)	0
Fatigue	34 (64.2)	14 (51.9)
Palmar-plantar erythrodysesthesia syndrome	18 (34.0)	9 (33.3)
Rash	4 (7.5)	7 (25.9)
Headache	19 (35.8)	10 (37.0)
Dizziness	2 (3.8)	6 (22.2)
Decreased appetite	19 (35.8)	10 (37.0)
Proteinuria	25 (47.2)	7 (25.9)

Hypertension, fatigue, and nausea were the most common TEAEs related to rivoceranib in US patients, while stomatitis, hypertension, and fatigue were the most common in Korean patients.

ALT, alanine aminotransferase; AST = aspartate aminotransferase; TEAE = treatment-emergent adverse event; US = United States.

Conclusions

- In this post hoc analysis of RM-202, Korean TKI-naïve patients demonstrated numerically longer PFS (13.7 months) compared with US TKI-naïve patients (8.9 months).
- Safety and tolerability were similar between both Korean and US patients.
- Given the exploratory nature of this post hoc analysis and the smaller Korean subgroup (n=27 vs n=53 for US), results should be interpreted with caution, and prospective evaluation in larger, region-specific cohorts is warranted.
- These findings highlight the importance of incorporating diverse geographic populations in ACC clinical trials and may inform region-specific treatment strategies.

ACC = adenoid cystic carcinoma; PFS = progression-free survival; TKI = tyrosine kinase inhibitor; US = United States.