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ARE THERE REALLY DIFFERENCES BETWEEN ACUTE AORTIC DISSECTIONS IN EASTERN AND WESTERN POPULATIONS?

To the Editor:

We read with great interest the recent article by Wang and colleagues,¹ which reported 6 differences compared with Western dissection series reported by the International Registry of Acute Aortic Dissection (IRAD), including earlier onset, more male patients, a low incidence of hypertension, a low incidence of chest pain, great differences in the choice of therapeutic strategies, and relatively low in-hospital mortality. The authors must be congratulated for their attempt to clarify this topic: the differences between Chinese patients (the Registry of Aortic Dissection in China, Sino-RAD) and Western patients. Nevertheless, this well-illustrated work is deserving of additional comments, particularly the characteristics of type A acute aortic dissection (TA-AAD). First, patients presenting with acute aortic dissection are, on average, aged 65 years,² and patients presenting with TA-AAD are aged 60 to 64 years.³ Acute aortic dissection is relatively uncommon in young patients and usually caused by connective tissue disorders.^{2,3} The authors found onset at an earlier age compared with the data reported by IRAD in patients with TA-AAD (50.5 vs 61.1 years). It was also an earlier onset compared with the reports from the German Registry for Acute Aortic Dissection Type A (GERAADA)³

and other East Asia countries^{4,6} (Table 1). At least 30% of patients with TA-AAD were aged 70 years or more, and 5% to 8% were aged less than 40 years in the reports of IRAD,⁷ GERAADA,³ and other East Asia countries^{4,8} (Table 1). In contrast, only 4.9% were aged 70 years or more and 15.8% were aged less than 40 years according to Sino-RAD. Similar trends were also reported from large series of other reports from China^{9,10} (Table 1). Thus, it is mandatory to clarify why the Chinese population has a 1-decade disparity in age at onset. Second, the authors stated that a male predominance was even greater than in the report from IRAD.¹¹ Rylski and colleagues³ emphasized that very young patients were usually male and very old patients were usually female. Therefore, the Sino-RAD data show more young patients and male patients. Third, the authors pointed out that the ratio of patients with hypertension was low (51.4%); however, this was not demonstrated by other reports from China^{9,10} (Table 1). Reports from Korea (56.6%)⁵ and GERAADA (53%)³ also showed lower incidences. In contrast, higher incidences were reported from IRAD (70.3%),^{9,11} Japan (78.2%),⁴ and Taiwan (83.1%).⁶ Fourth, the authors reported a low incidence of chest pain (26.0%) and a high incidence of back pain (71.9%). Likewise, the incidence of anterior chest pain was not supported by the other report from China.⁹ Nevertheless, a higher incidence of back pain was found in the reports from China (71.9% in Sino-RAD¹ and 62.0% in Li and colleagues⁹) compared with the reports from Japan (50.6%),¹² IRAD (41.3%),¹³ and Taiwan (25.9%)⁸ (Table 1). Fifth, the authors reported a lower in-hospital mortality in patients with TA-AAD repair (5.3%) compared with that of IRAD (23.6%). This excellent mortality rate might be explained partly by natural selection bias and referral bias. In addition, old age was an independent predictor of in-hospital mortality²; however, only 4.9% of their patients were aged 70 years or more. Of note, preoperative shock is the most important predictor of in-hospital mortality after TA-AAD repair. A prevalence of 20% to 30% or even more of patients with TA-AAD presenting with shock has been reported (Table 1).^{4,6,7,14} However, no data on this were available in Sino-RAD. Last, there are disparities in the incidence of intramural hemorrhage or hematoma between West and East Asia,² only 3.5% from the IRAD report,¹⁵ but 27.5% in Korea,⁵ 28.9% in Taiwan,⁶ and 44.1% in Japan.¹⁶ There was no comparable intramural hemorrhage or hematoma data in the Sino-RAD, although the incidence was 2.9% reported in the other report from China.⁹

On the basis of the discrepancies between Sino-RAD and other reports from China, between Sino-RAD and other East Asia countries, and between Sino-RAD and Western series, additional research is highly recommended to clarify this unresolved and interesting issue.

TABLE 1. Characteristics of acute type A aortic dissection from Eastern and Western series

Country or registry	China			Japan	South Korea	Taiwan	IRAD	GERAADA
Authors	Wang and colleagues ¹	Li and colleagues ⁹	Ma and colleagues ¹⁰	Tokuda and colleagues ^{4*}	Song and colleagues ⁵	Chen and colleagues ⁶	Booher and colleagues ¹¹	Rylski and colleagues ³
Year of publication	2014	2012	2014	2014	2009	2013	2013	2014
Time period of patients enrolled	2012-2013	2008-2011	2003-2012	2008-2012	1993-2008	1997-2011	1996-2007	2006-2010
No. of cases	430	726	456	4128	357	142	1160	2137
Age (y)								
Mean (SD)	50.5 (11.2)	47.5 (11.2)	46.2 (10.5)	69.1 (11.8)	58.5	59.5 (11.8)	61.1 (14.3)	60.5
<40 y	68 (15.8)	174 (24.0)	126 (27.6)			7/133 (5.3) ¹⁰	67/936 (7.2) ⁷	160 (7.5)
≥70 y	21 (4.9)	22 (3.0)		2099 (50.8)			300/936 (32.1) ⁷	640 (30.0)
Male	328 (76.3)	608 (83.7)	376 (82.5)	1729 (41.9)	169 (47.3)	99 (69.7)	779 (67.2)	1318 (61.7)
Hypertension	221 (51.4)	532 (73.6)	333 (73.0)	3230 (78.2)	202 (56.6)	118 (83.1)	795 (70.9)	1133 (53.0)
Chest pain	112 (26.0)	554 (76.3)		149/233 (64.0) ¹²		107 (75.4)	1453/1873 (77.6) ⁹	
Back pain	309 (71.9)	450 (62.0)		118/233 (50.6) ¹²		39/133 (29.3) ¹⁰	774/1873 (41.3) ⁹	
Preoperative shock		65 (9.0)		800 (19.4)		39 (27.5)	242/936 (25.9) ⁷	1236 (57.8) ¹⁴
IMH		21 (2.9)		171/388 (44.1) ¹⁶	101 (28.3)	41 (28.9)	64/1808 (3.5) ¹¹	
Surgical management	226 (52.6)	547 (75.0)	456†	4128†	240 (67.2)	142†	974 (84.0)	2137†
Surgical in-hospital mortality	12 (5.3)	185 (33.8)	37 (8.1)	355 (8.6)	26 (10.8)	28 (19.7)	230 (23.6)	366 (17.1)‡

Data presented as mean (standard deviation) or n (%). IMH, Intramural hemorrhage or hematoma; IRAD, International Registry of Acute Aortic Dissection; GERAADA, German Registry for Acute Aortic Dissection Type A; SD, standard deviation. *Data were from the Japan Adult Cardiovascular Surgery Database. †All enrolled cases treated surgically. ‡Thirty-day mortality.

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