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Prevalence and clinical relevance of the anatomical variations of suprarenal arteries: a review

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In the version of this article originally published, there was an error in Table 1. “843 fetuses” should be replaced by “168 fetuses”. The corrected version of Table 1 is included below. The corrected part is underlined.

We apologize for our mistake and any inconvenience this may have caused.

Table 1. Incidence of variant origin of suprarenal arteries

Authors (year)	Population/region	No. and type of specimens	Variations					
			Superior suprarenal arteries		Middle suprarenal arteries		Inferior suprarenal arteries	
			R	L	R	L	R	L
Dobbie and Symington (1966) [16]	Scotland	20 autopsies of human adults, 50 adult patients	S: 100%		M: 100%		I: 100%	
Lamarque et al. (1973) [14]	France	255 total aortography, 373 selective arteriography of suprarenal gland	S: 100%		-		I: 51.5% I_{ab}: 48.5%	I: 44% I_{ab}: 56%
Toni et al. (1988) [15]	Italy	100 abdominal angiographies	S: 92% S_{CT}: 5% S_{AA}: 3%	S: 79% S_{AA}: 16% S_{IC}: 3% S_{CT}: 2%	M: 91% M_{CT}: 4% M_{IP}: 3% M_{RA}: 2%	M: 99% M_{CT}: 1%	I: 96% I_{PR}: 2% I_{AA}: 2%	I: 95% I_{AA}: 5%
Bianchi and Ferrari (1991) [4]	Argentina	50 fetuses	S: 100%	S: 96% S_{CT}: 4%	M: 68% M_{IP}: 32%	M: 68% M_{IP}: 20% M_{CT}: 12%	I: 60% $I+I_{GA}$: 12% I_{SPA}: 4% $I_{SPA}+I_{GA}$: 12% I_{AA}: 4% I_{GA}: 4% I_{AGA}: 4%	I: 40% I_{AA}: 24% I_{GA}: 8% $I+I_{GA}$: 8% IA_{GA}: 4% $I_{GA}+I_{AGA}$: 4% $I+I_{SPA}$: 4% $I_{AA}+I_{SPA}$: 4% $I_{SPA}+I_{GA}$: 4%
Pityński et al. (1998) [3]	Poland	40 fetuses	S: 100%	S: 95% $S+S_{AA}$: 5%	M: 32.5% M_{IP}: 27.5% $M+M_{IP}$: 15% M_{RA}: 17.5% M_{GA}: 7.5%	M: 47.5% M_{IP}: 17.5% $M+M_{SSA}$: 2.5% $M+M_{IP}$: 22.5% M_{RA}: 7.5% M_{GA}: 2.5%	I: 55% $I+I_{AA}$: 25% $I+I_{SPA}$: 5% $I+I_{GA}$: 7.5% $I+I_{GA}+I_{AA}$: 2.5% $I+I_{AA}+I_{SPA}$: 2.5% I_{SMA}: 2.5%	I: 47.5% $I+I_{AA}$: 32.5% $I+I_{SPA}$: 2.5% $I+I_{GA}$: 12.5% $I+I_{GA}+I_{AA}$: 10% $I+I_{GA}+I_{SPA}$: 5%
Manso and DiDio (2000) [12]	Brazil	30 pairs of suprarenal glands	S: 86.7% S_{CT}: 6.7% S_{AA}: 3.3% $S_{AA}+S_{ISA}$: 3.3%	S: 83.3% S_{CT}: 6.7% S_{AA}: 10%	M: 53.3% M_{IP}: 26.7% M_{SSA}: 3.3% M_{ISA}: 6.7% M_{SMA}: 3.3% M_{RA}: 3.3% M_{CT}: 3.3%	M_{AA}: 46.7% M_{IP}: 26.7% M_{SSA}: 10.0% M_{ISA}: 6.7% M_{SMA}: 3.3% M_{RA}: 3.3% M_{CT}: 3.3% M_{RA}: 3.3%	I: 70% I_{AA}: 26.7% $I_{AA}+I_{SSA}$: 3.3%	I: 50% I_{AA}: 36.7% I_{SPA}: 3.3% I_{IPA}: 3.3% I_{GA}: 6.6%
Yalçin et al. (2004) [29]	Turkey	25 years old female cadaver	-		M_{CT}		I	
Cimen et al. (2007) [30]	Turkey	45 years old male cadaver	-		M_{RA}	M	I	-
Deepthinath et al. (2006) [31]	South Indian	45 years old male cadaver	-		M_{RA}	M_{CT}	I	-

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Table 1. Continued 1

Authors (year)	Population/region	No. and type of specimens	Variations					
			Superior suprarenal arteries		Middle suprarenal arteries		Inferior suprarenal arteries	
			R	L	R	L	R	L
Dutta (2010) [5]	North Indian	68 human cadavers	S: 100%	S: 76% S_{AA}: 18% S_{SA}: 6%	M: 53% M_{ARA}: 18% Absent: 29%	M: 94% M_{ARA}: 6%	I: 76% I_{GA}: 18% I_{AA}: 6%	I: 59% I_{GA}: 6% Absent: 35%
Oztürk et al. (2010) [24]	Turkey	50 years old male cadaver	Absent		M		I_{AA}	
Jyothsna et al. (2012) [36]	South Indian	55 years old male cadaver	-		-		-	I_{AA}
Chakravarthi (2014) [21]	South Indian	Middle-aged male cadaver	S_{AA}	S_{AA}	M	M	-	-
Sushma et al. (2014) [17]	South Indian	20 cadavers	S: 100%	S: 100%	M: 80% M_{RA}: 10% M_{ARA}: 5% M_{IP}: 5%	M: 90% M_{IP}: 5% M_{CT}: 5%	I: 90% I_{ARA}: 5% I_{IP}: 5%	I: 90% I_{ARA}: 10%
Sarkar et al. (2014) [18]	Northeast India	54 years old male cadaver	S	S_{CT}	M	Absent	I	I
Ahmed et al. (2015) [20]	South Indian	25 adult and 50 fetal cadavers	S: 88% S_{ab}: 12%		M: 93.34% M_{ab}: 6.66%		I: 93.34% I_{ab}: 6.66%	
Lakshmi and Dhoot (2016) [6]	North Indian	15 adult human cadavers	S: 100%	S: 100%	M: 83.33% M_{ARA}: 13.33% M_{RA}: 3.33%	M: 96.66% M_{CT}: 3.33%	I: 83.33% I_{ARA}: 16.66%	I: 66.66% I_{ARA}: 33.33%
Shanthakumar et al. (2016) [19]	South Indian	58 years old male cadaver	S	-	M	-	I	IGA
Olewnik et al. (2018) [22]	Poland	64 years old male cadaver	S_{RA}		Absent		I	
Greeff et al. (2019) [27]	South African	50 fetuses	S: 98% Absent: 2%	S: 98% Absent: 2%	M: 18% M_{RA}: 62% Absent: 20%	M: 34% M_{RA}: 26% Absent: 40%	I: 90% I_{AA}: 10%	I: 92% I_{AA}: 6% I_{ARA}: 2%
Vinitha and Parthasarathy (2020) [37]	South Indian	48 cadavers	S: 81.33% S_{AA}: 16.67% S_{CT}: 2%		M: 98% Absent: 2%		I: 98% I_{AA}: 2%	
Xu et al. (2020) [42]	Chinese	168 fetuses	-		M: 89.2% Absent: 10.79%		-	
South Indian[a)]		147	S: 86.8% S_{AA}: 6.2% S_{CT}: 0.8% S_{ab}: 6.2%		M: 92.8% M_{absent}: 0.7% M_{AB}: 3.4% M_{RA}: 1% M_{ARA}: 0.3% M_{CT}: 0.7% M_{IP}: 0.7%		I: 92.9% I_{AA}: 1% I_{ARA}: 10.2% I_{IP}: 0.3% I_{ab}: 3.4% I_{GA}: 0.3%	
North Indian[b)]		83	S: 90.4% S_{AA}: 7.2% S_{SA}: 2.4%		M: 76% M_{ARA}: 11% M_{CT}: 0.4% M_{RA}: 0.4% Absent: 12%		I: 73.5% I_{GA}: 9.7% I_{AA}: 2.4% I_{ARA}: 4.7% I_{absent}: 9.7%	

Table 1. Continued 2

Authors (year)	Population/region	No. and type of specimens	Variations					
			Superior suprarenal arteries		Middle suprarenal arteries		Inferior suprarenal arteries	
			R	L	R	L	R	L
Caucasians[c]		919	S: 97.5% S_{AA}: 1.3% S_{CT}: 0.8% S_{IC}: 0.1% $S_{AA}+S_{ISA}$: 0.1% $S+S_{AA}$: 0.1% S_{RA}: 0.1%		M: 93.5% M_{absent}: 0.1% M_{IP}: 3.4% M_{SSA}: 0.2% M_{ISA}: 0.2% M_{SMA}: 0.1% M_{RA}: 0.7% M_{CT}: 0.7% $M+M_{SSA}$: 0.1% $M+M_{IP}$: 0.8% M_{GA}: 0.2%		I: 57.7% I_{ab}: 35.7% I_{IPA}: 0.05% I_{PR}: 0.1% I_{AA}: 2.06% $I+I_{GA}$: 0.9% I_{SPA}: 0.2% I_{GA}: 0.4% $I_{SPA}+I_{GA}$: 0.4% I_{AGA}: 0.2% $I_{GA}+I_{AGA}$: 0.1% $I+I_{SPA}$: 0.3% $I_{AA}+I_{SSA}$: 0.1% $I+I_{AA}$: 1.3% $I+I_{SSA}$: 0.05% $I+I_{GA}+I_{AA}$: 0.2% $I+I_{AA}+I_{SPA}$: 0.05% $I+I_{GA}+I_{SPA}$: 0.1%	
Turkish[d]		3	S: 66.7% Absent: 33.3%		M: 66.7% M_{CT}: 33.3% M_{RA}: 33.3%		I: 66.7% I_{AA}: 33.3%	

The subscript in the table is denoting the origin of the respective arteries: ab, abnormal origin; AA, abdominal aorta; CT, coeliac trunk; IC, intercostal artery; IP, inferior phrenic artery; RA, renal artery; PR, polar renal artery; GA, gonadal artery; SPA, superior polar artery; AGA, accessory gonadal artery; SMA, superior mesenteric artery; ISA, inferior suprarenal artery; SSA, superior suprarenal artery; IPA, inferior polar artery; SA, splenic artery; ARA, accessory renal artery. [a]Average results for the South Indian population include Deepthinath et al. (2006) [31], Jyothsna et al. (2012) [36], Chakravarthi (2014) [21], Sushma et al. (2014) [17], Ahmed et al. (2015) [20], Shanthakumar et al. (2016) [19], Vinitha and Parthasarathy (2020) [37]. [b]Average results for North Indian population include Dutta (2010) [5], Lakshmi and Dhoot (2016) [6]. [c]Average results for Caucasian population include Dobbie and Symington (1966) [16], Lamarque et al. (1973) [14], Toni et al. (1988) [15], Bianchi and Ferrari (1991) [4], Pityński et al. (1998) [3], Manso and DiDio (2000) [12], Olewnik et al. (2018) [22]. [d]Average results for Turkish population includes Yalçin et al. (2004) [29], Cimen et al. (2007) [30], Oztürk et al. (2010) [24]. R, right; L, left; S, normal origin of superior suprarenal artery; M, normal origin of middle suprarenal artery; I, normal origin of inferior suprarenal artery.