

The operative mortality of children with transposition of greater arteries in Taiwan, 1997 to 2008

Chi-Wen Lin^{1,2}, Jeng-Sheng Chang³

Institute of Health Industry Management, Central Taiwan University of Science and Technology¹

Department of Physical Medicine and Rehabilitation, Buddhist Tzu Chi Hospital, Taichung Branch²

Division of Pediatric Cardiology, Children's Hospital, China Medical University & Hospitals³

Key Word : Congenital Heart Disease

BACKGROUND: The transposition of greater arteries (TGA) is the second most common cyanotic congenital heart disease in children. Most of them die within 2 months if not being surgically corrected. There are 21 cases of TGA every 100,000 newborns in Taiwan. The most optimal timing for arterial switch operation (ASO) is within one month of life.

OBJECTIVE: To understand the operative mortality of ASO procedure in Taiwan's TGA infants.

METHOD: This is a population-based study using administrative data from the secondary database of the Bureau of National Health Insurance, namely "Inpatient expenses detailed file". We used a retrospective cohort design to identify the TGA infants hospitalized for ASO procedure during the period of 1997-2008. The cases enrolled into this study are compatible with both (1) a diagnosis of TGA according to the ICD-9 classification, and (2) a procedure code of ASO procedure in the same admission. The TGA patients associated with ASD, PDA or PS are defined as 'simple TGA', while those also associated with VSD or coarctation of aorta are defined as 'complex TGA'. Other complex CHDs are excluded from this study.

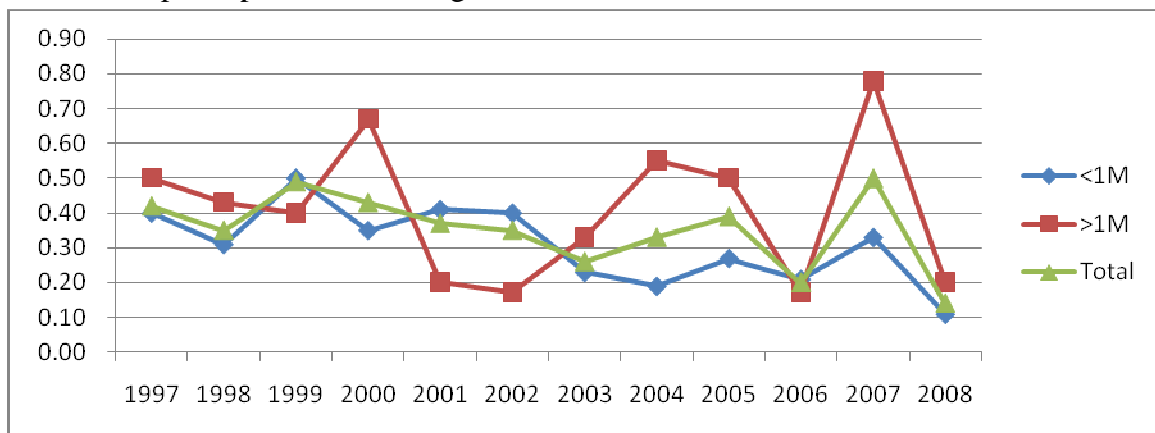
RESULTS:

Table 1: The annual operative fatality patients (percentage) of TGA children after ASO procedure in Taiwan, 1997 to 2008, are grouped by gender, age and types.

		1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Gender													
Male	n	16	12	24	15	21	15	16	19	10	14	14	8
	m(%)	7(44)	4(33)	12(50)	6(40)	8(38)	7(47)	5(31)	7(37)	2(20)	2(14)	4(29)	0(0)
Female	n	3	8	11	8	6	11	3	8	13	6	10	6

	m(%)	1(33)	3(38)	5(45)	4(50)	2(33)	2(18)	0(0)	2(25)	7(54)	2(33)	8(80)	2(33)
Age													
<1M	n	15	13	30	17	22	20	13	16	11	14	15	9
	m(%)	6(40)	4(31)	15(50)	6(35)	9(41)	8(40)	3(23)	3(19)	3(27)	3(21)	5(33)	1(11)
>1M	n	4	7	5	6	1	6	6	11	15	6	9	5
	m(%)	2(50)	3(43)	2(40)	4(67)	1(20)	1(17)	2(33)	6(55)	6(50)	1(17)	7(78)	1(20)
Type													
Simple	n	11	10	20	14	15	15	10	12	14	12	16	10
	m(%)	4(36)	2(20)	11(55)	5(36)	4(27)	7(47)	2(20)	2(17)	5(36)	3(25)	8(50)	1(10)
Complex	n	8	10	15	9	12	11	9	15	9	8	8	4
	m(%)	4(50)	5(50)	6(40)	5(56)	6(50)	2(18)	3(33)	7(47)	4(44)	1(13)	4(50)	1(25)
Total	n	19	20	35	23	27	26	19	27	23	20	24	14
	m(%)	8(42)	7(35)	17(49)	10(43)	10(37)	9(35)	5(26)	9(33)	9(39)	4(20)	12(50)	2(14)

Figure 1 : Declining of annual mortality rates of TGA after ASO procedure 1997-2008 is shown, esp. the patients receiving ASO within one month of life.



The operative mortality between two age group is not statistical significant ($p>.05$).

DISCUSSION: There are more children with TGA receiving ASO within one month of life in Taiwan, 1997-2008, and their operative mortality is lower than that older. However, the overall operative mortality is still unstable.