

THE EFFECT OF RAPID RESPONSE TEAM RELATED TO IN - HOSPITAL MORTALITY

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Introduction: Many clinical studies have found that whether the rapid response team (RRT) has positive effect on reducing the incidence of in-hospital mortality, there are polarized views in different discussion. This article has tried to explore the effect of mortality when initiating RRT that with comparative studies over time and Ordinary Least Squares empirical analysis method. It was found that the in-hospital mortality rate decreased from 0.4788% to 0.1937%, and the unexpected cardiac arrest mortality rate decreased from 24.8611% to 10.4167% during October 2013 to September 2020.

Methods: To reduce the incidence of in-hospital mortality and prevent unexpected cardiopulmonary arrest in the wards, hospital has established a rapid response team since 2014. It began to be tried in a small number of wards from July 15, 2014 to August 30, 2014. and then all wards were implemented from September 2014 until 2019. In February 2019, there automatic uploading blood pressure machine was purchased for using in each ward, that hoped to shorten the notification time. The Rapid Response Group discusses and revises to improve the assessment physiological standard items through meetings every year. The contents of standard as follows:

- 1. The body temperature is lower than 36 degrees, the heart rate is less than 50 or greater than 100 beats per minute, new pain or pain is obviously aggravated, the breathing rate is less than 6 times or greater than 20 times per minute, and the blood oxygen saturation is less than 90% or requires Increased FiO2, systolic blood pressure less than 90mmHg, average blood pressure less than 60mmHg, sudden change of consciousness or sudden inability to wake up, microvascular refill greater than 3 seconds and urine output less than 30mL/hrX2hrs (dialysis patients excluded).
- 2. The members of rapid response team are the specialist attending physicians and residents in the ward or the attending physicians and residents on duty. The quick-response system can be activated by nurses in the local ward or specialized nurses, and will arrive at the patient's bedside within 15 minutes to provide interventional treatment.

Results: Beginning to the implementation of rapid response team in E-DA Hospital, it has been found that the number of unexpected cardiac arrests has dropped from 33 to 9 for 2 years, and the incidence of death after active CPR has dropped from 24.86% to 10.42%. Therefore, starting RRT can indeed reduce the incidence of in-hospital death and unexpected cardiac arrest mortality.

Image:

Table 1 Correlation with in-hospital mortality per year								
year	total number of admission	total number of deaths	total number of DNR	total death rate DNR	Total Deaths -Total DNR	Deduction of DNR mortality	the total number of unexpected CPR	Unexpected total CPR mortality
2013/10-2014/09	38503	621	436	1.1288%	185	0.4788%	33	24.8611%
2014/10-2015/09	39886	676	506	1.2673%	170	0.4278%	22	8.3333%
2015/10-2016/09	37251	737	507	1.3726%	230	0.6178%	23	28.6111%
2016/10-2017/09	34383	742	558	1.6204%	184	0.5344%	26	22.2222%
2017/10-2018/09	32694	663	525	1.6203%	138	0.4201%	11	27.7778%
2018/10-2019/09	31860	686	612	1.9256%	74	0.2342%	9	22.9167%
2019/10-2020/09	28325	541	486	1.6825%	55	0.1937%	9	10.4167%
N	243502	4666	3630	1.5168%	1036	0.4152%	133	20.7341%

Conclusion: Initiating rapid response team can reduce the incidence of in-hospital death and unexpected cardiac arrest mortality, protect the rights and interests of doctors and patients, and improve the well-being of patients. For sympathizing with the hard work of nursing staff in clinical work, we hope that our hospital can introduce Clinical Decision Supporting System (CDSS or AI) to automatically upload vital sign data and automatically send out danger signals, thereby reducing the clinical workload of nursing staff.

Disclosure of Interest: None Declared

Keywords: patient safety, RAPID RESPONSE TEAM

