

## Primary versus Rescue PCI: Why is Primary Better?

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### Clinical Note

Myocardial infarction is the most important cause of morbidity and mortality in developing country. The two therapeutic strategies for treating myocardial infarction are thrombolytic therapy and primary Percutaneous coronary intervention (PCI) [1]. Some studies demonstrated that primary PCI had significant clinical benefit compared to thrombolytic therapy [2] but owing to primary PCI is not available in some hospitals some patients inevitably are treated by thrombolytic therapy and sometimes thrombolytic therapy failed to provide complete re occlusion and TIMI grade 3 is not achieved and the patients must refer to performed rescue PCI [3]. Some studies compared the outcome of primary PCI and rescue PCI and showed that there are no significant difference between clinical outcome of rescue PCI and primary PCI [4], in contrast some studies demonstrated that primary PCI had lower intra hospital death rates compared to rescue PCI [5] there are three reasons for this findings first the total ischemic time in rescue PCI is longer than primary PCI. Clinical studies showed that longer ischemic time is associated with larger infarct size and with higher major adverse cardiac events [6]. Second the procoagulant activity of thrombolytic agents might be related to this findings because animal study showed that thrombolytic agent lead to activation of the kallikrein-factor XII pathway [7] third during rescue PCI owing to partial occlusion, the reperfusion phase happens for the second time and the double reperfusion may be aggravate the myocardial reperfusion injury [8] of course the authors believe that beside the reasons mentioned other mechanism may be involved in this regard.

### References

1. Keeley EC, Boura JA, Grines CL (2003) Primary angioplasty versus intravenous thrombolytic therapy for acute myocardial infarction: a quantitative review of 23 randomised trials. *The Lancet* 361(9351): 13-20.
2. De Boer MJ, Ottervanger JP, van't Hof AW, Hoorntje JC, Suryapranata H, et al. (2002) Reperfusion therapy in elderly patients with acute myocardial infarction: a randomized comparison of primary angioplasty and thrombolytic therapy. *J of the American College of Cardiology* 39(11): 1723-1728.
3. Gershlick AH, Stephens Lloyd A, Hughes S, Abrams KR, Stevens SE, et al. (2005) Rescue angioplasty after failed thrombolytic therapy for acute myocardial infarction. *New England Journal of Medicine* 353(26): 2758-2768.
4. Gimelli G, Kalra A, Sabatine MS, Jang IK (2000) Primary versus rescue percutaneous coronary intervention in patients with acute myocardial infarction. *Acta cardiologica* 55(3): 187-192.
5. Mattos LA, Sousa AG, Pinto IM, Silva ER, Carneiro JK, et al. (2004) A comparison of rescue and primary percutaneous coronary interventions for acute myocardial infarction: a multicenter registry report of 9,371 patients. *Arquivos brasileiros de cardiologia* 82(5): 434-439.
6. Rathore SS, Curtis JP, Chen J, Wang Y, Nallamothu BK, et al. (2009) Association of door-to-balloon time and mortality in patients admitted to hospital with ST elevation myocardial infarction: national cohort study. *Multicenter Study* 338: b1807.

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7. Hoffmeister HM, Szabo S, Kastner C, Beyer ME, Helber U, et al. (1998) Thrombolytic therapy in acute myocardial infarction: comparison of procoagulant effects of streptokinase and alteplase regimens with focus on the kallikrein system and plasmin. *Circulation* 98(23): 2527-2533.
  8. Hausenloy DJ, Yellon DM (2013) Myocardial ischemia-reperfusion injury: a neglected therapeutic target. *The Journal of clinical investigation* 123(1): 92-100.