Author(s): Janel Swain and Tom Evans
Date:
Question: Early aspirin administration after symptom onset compared to late aspirin administration after symptom onset in adults with chest pain
Settings: In the pre-hospital setting
Bibliography (systematic reviews): the pre-hospital setting Bibliography: Barbash IM, Freimark D, Gottlieb S, Hod H, Hasin Y, Battler A, Crystal E, Matetzky S, Bokyo V, Mandelzweig L, Behar S, Leor J. Outcome of Myocardial Infarction in Patients Treated with Aspirin is Enhanced by Pre-Hospital Administration. Cardiology 2002;90:141-47. Freimark D, Matetzky S, Leor J, Bokyo V, Barbash IM, Behar S, Hod H. Timing of Aspirin Administration as a Determinant of Survival of Patients With Acute Myocardial Infarction Treated WIth Thrombolytics. Am J Cardiol 2002;89:381-385. ISIS-2 Collaborative Group. Randomised Trial of Intravenous Streptokinase, Oral Aspirin, Both, or Neither Among 17 187 Cases of Suspected Acute Myocardial Infarction: ISIS-2. Lancet 1988;ii:349-360.

Quality assessment							№ of patients		Effect		Quality	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	early aspirin administration after symptom onset	late aspirin administration after symptom onset	Relative (95% CI)	Absolute (95% CI)		
7-day mortality (follow up: 7 days; assessed with: Case records/medical charts) (Barbash 2002, 141; Freimark 2002, 381)												
2	observational studies [1,2]	serious [3]	not serious	serious [4]	not serious	none	17/702 (2.4%)	92/1420 (6.5%)	**RR 0.37** (0.23 to 0.62)	41 fewer per 1000 (from 25 fewer to 50 fewer)	⊕◯◯◯ VERY LOW	CRITICAL
30-day mortality (follow up: 30 days; assessed with: Case records/medical charts) (Barbash 2002, 141; Freimark 2002, 381)												
2	observational studies [1,2]	serious [3]	not serious	serious [4]	not serious	none	28/702 (4.0%)	125/1420 (8.8%)	**RR 0.45** (0.3 to 0.68)	48 fewer per 1000 (from 28 fewer to 62 fewer)	⊕◯◯◯ VERY LOW	CRITICAL
5-week cardiovascular mortality (follow up: median 15 months; assessed with: Discharge forms and mortality records) (ISIS-2 1988, 349)												
1	randomised trials [5]	not serious [6]	not serious	very serious [4]	not serious	none	114/1309 (8.7%)	690/7278 (9.5%)	**RR 0.92** (0.76 to 1.11)	8 fewer per 1000 (from 10 more to 23 fewer)	⊕⊕◯◯ LOW	CRITICAL
1-year mortality (follow up: 1 years; assessed with: Case records/medical charts) (Freimark 2002, 381)												
1	observational studies [7]	not serious	not serious	serious [4]	not serious	none	18/364 (4.9%)	88/836 (10.5%)	**RR 0.47** (0.29 to 0.77)	56 fewer per 1000 (from 24 fewer to 75 fewer)	⊕◯◯◯ VERY LOW	CRITICAL
In-hospital complications (assessed with: Medical charts) (Barbash 2002, 141)												
1	observational studies [8,9]	not serious	not serious	serious [4]	not serious	none	52/338 (15.4%)	147/584 (25.2%)	**RR 0.61** (0.46 to 0.81)	98 fewer per 1000 (from 48 fewer to 136 fewer)	⊕◯◯◯ VERY LOW	CRITICAL
Complications (follow up: 30 days; assessed with: Case records/medical charts) (Freimark 2002, 381)												
1	observational studies [7,10]	serious [3]	not serious	serious [4]	not serious	none	206/364 (56.6%)	388/836 (46.4%)	**RR 1.22** (1.09 to 1.37)	102 more per 1000 (from 42 more to 172 more)	⊕◯◯◯ VERY LOW	CRITICAL
In-hospital cardiac arrest (assessed with: Medical charts) (Barbash 2002, 141)												
1	observational studies [8,11]	not serious	not serious	serious [4]	not serious	none	34/338 (10.1%)	72/584 (12.3%)	**RR 0.82** (0.56 to 1.2)	22 fewer per 1000 (from 25 more to 54 fewer)	⊕◯◯◯ VERY LOW	CRITICAL

Quality assessment							№ of patients		Effect		Quality	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	early aspirin administration after symptom onset	late aspirin administration after symptom onset	Relative (95% CI)	Absolute (95% CI)		
Incidence of cardiac arrest (follow up: 30 days; assessed with: Case records/medical charts) (Freimark 2002, 381)												
1	observational studies [7] [12]	serious [3]	not serious	serious [4]	not serious	none	58/364 (15.9%)	87/836 (10.4%)	**RR 1.53** (1.13 to 2.09)	55 more per 1000 (from 14 more to 113 more)	⊕◯◯◯ VERY LOW	CRITICAL

MD – mean difference, RR – relative risk

1. For both the intervention and control group, the data was pooled from the two papers by adding the number of total patients and number of patients with an event together. There was no statistical analysis done.
2. In one study (Barbash), early aspirin administration (intervention) refers to those who received ASA before hospital admission and late aspirin administration (control) refers to those who received aspirin after hospital admission. In the other study (Freimark), early aspirin (intervention) refers to those who received aspirin prior to initiation of thrombolytic therapy and late aspirin administration (control) refers to those who received aspirin after initiation of thrombolytic therapy.
3. There was no control for confounding variables (including thrombolysis and not controlling for underlying disease/health)
4. Looked at MI patients only, not just chest pain; also this article was looking at administration vs no administration (not early vs late) therefore a sub analysis of the data was required
5. In this data set, early aspirin administration (intervention) refers to those who received aspirin within 2 hours from onset of pain and late administration (control) refers to those who received aspirin between 3 and 24 hours after onset of pain (which would represent when a first aider would be with the person)
6. Though aspirin and placebo were supplied by pharmaceutical company and rest of study was funded by the manufacturer of 'Streptase', the study was designed, conducted, and analyzed separate of these companies
7. In this study, early aspirin administration (intervention) refers to those who received aspirin prior to initiation of thrombolytic therapy and late aspirin administration (control) refer to those who received aspirin after initiation of thrombolytic therapy
8. In this study, early aspirin administration (intervention) refers to thsoe who received aspirin before hospital admission and late aspirin administration (control) refers to those who received aspirin after hospital admission
9. The in-hospital complications included in this data set are considered to be morbidities due to the cardiac event including recurrent MI, pulmonary edema, free wall rupture, ventricular septal defect, significant mitral regurgitation, and cardiogenic shock
10. The complications included in this data set are considered to be morbidities due to the cardiac event including recurrent ischemia, recurrent MI, AV block, atrial fibrillation, cardiogenic shock and pulmonary edema
11. Data for in-hospital incidence of cardiac arrest included events listed in this paper as either asystole, sustained VT or primary VF
12. Data for incidence of cardiac arrest included events listed in this paper as ventricular tachycardia/fibrillation