Linoleic acid in adipose tissue and risk of ischemic stroke


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ECMO-ASSISTED RESUSCITATION

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The Minnesota resuscitation consortium refractory VF early mobilization protocol. one year report
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Background: In December of 2015, the Minnesota Resuscitation Consortium implemented a systems-based protocol of early mobilization to a tertiary academic hospital for patients presenting with out-of-hospital refractory shockable rhythms (VF/VT). We report the outcomes of 63 patients treated within the first year of the protocol.

Methods: Two major emergency medical services systems serving the Minneapolis-St Paul metro area participated in the protocol. Inclusion criteria included age 18–75 years, body habitus accommodating automated LUCAS CPR, and estimated transfer time from the scene to the cardiac catheterization laboratory of <30 minutes. Exclusion criteria included known terminal illness, DNR/DNI status, traumatic arrest, and significant bleeding. Refractory VF/VT arrest was defined as failure to achieve sustained ROSC after treatment with 3 direct current (DC) shocks. Patients were transported to the University of Minnesota hospital where emergent advanced perfusion strategies (ECMO), followed by coronary angiography and PCI, were performed, when appropriate.

Results: Over the first 12 months of the protocol, 63 patients were transported directly to the cardiac catheterization laboratory. Of these, 50 patients met the inclusion criteria and achieved a ROSC. 76% of patients had significant coronary artery disease and 67% received PCI. The median (interquartile range) interval from arrest to ECMO was shorter (median 46 [interquartile range 42–48] min) compared to cases with non-heart related causes of arrest (53 [46–63] min, p<0.01). None of the 50 patients had no chronic complications. Patients were transported to the University of Minnesota hospital where emergent advanced perfusion strategies (ECMO), followed by coronary angiography and PCI, were performed, when appropriate.

Conclusions: A systems-based approach for the management of OHCA refractory VF/VT protocol with early mobilization to an ECMO /PCI capable hospital is feasible in a large US metropolitan area and leads to a high functionally favorable neurological outcome of 76% of patients had significant coronary artery disease and 67% received PCI. Refractory VF/VT arrest was defined as failure to achieve sustained ROSC after treatment with 3 direct current (DC) shocks. Patients were transported to the University of Minnesota hospital where emergent advanced perfusion strategies (ECMO), followed by coronary angiography and PCI, were performed, when appropriate.

ECMO-ASSISTED RESUSCITATION

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Higher survival rates in exercise-related out-of-hospital cardiac arrests, compared to non-exercise-related cardiac arrests - a study from the Swedish Register of Cardiopulmonary Resuscitation
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Background: The total incidence of exercise-related out-of-hospital cardiac arrests (OHCA) is however scarcely studied, and neither are prognosis and characteristics of these events. One of the limiting factors for previous studies has been the lack of comprehensive registries, to be able to detect the true incidence in the whole population cohorts.

Purpose: To assess the incidence of exercise-related OHCAs in the general population of all ages and to compare characteristics and prognosis of these cardiac arrests with non-exercise-related OHCA.

Methods: All cases of OHCA outside of home reported to the Swedish Register of Cardiopulmonary Resuscitation from 2011 to 2015 in three counties of Sweden were included (population 2.1 million). This registry captures almost 100% of all OHCA in Sweden. Information on OCHAs regarding survival, treatment and diagnosis was obtained from the registry. Additional data variables were extracted from EMS medical records and hospital medical records by a computer software.

Results: A total number of 1825 cases of OHCA outside of home where resuscitation was attempted occurred in the three counties during the study period. Of these 1825, 157 (7.5%) were exercise related, resulting in an incidence of 1.2 per 100,000 person-years. The 30-day survival rate was significantly higher among exercise-related OHCA compared to non-exercise-related OHCA (54.3% vs 49.4%, p<0.0001). Patients suffering an exercise-related OHCA were on average 10 years younger than those who had a non-exercise-related OHCA. 54.3% compared to 67.2 years. Exercise-related OHCA were more often witnessed (89.4% vs 78.6%, p<0.002) compared to cases of non-exercise-related OHCAs. The sports activities most commonly associated with exercise-related OHCA were cycling (20%), gym workout/group training (11%) and golf (9%).

Discussion: The incidence of exercise-related OHCA in the general population is 1.2 per 100,000 person-years. Cardiac arrests that occur in relation to exercise have a significantly better prognosis and outcome than non-exercise-related cardiac arrests. This may be explained by favorable circumstances such as higher degree of bystander CPR but may also reflect that these persons experience an exercise before arrival of EMS (20.4% vs 4.6%, p<0.0001) compared to cases of non-exercise-related OHCAs. The sports activities most commonly associated with exercise-related OHCA were cycling (20%), gym workout/group training (11%) and golf (9%).

BEST POSTERS 1

BEST POSTERS IN CEREBROVASCULAR DISEASE

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Linoleic acid in adipose tissue and risk of ischemic stroke
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Background/Introduction: Linoleic acid, the predominant n-6 polyunsaturated fatty acid, is known to reduce plasma low-density lipoprotein cholesterol and has been recommended for prevention of coronary heart disease. Whether linoleic acid...
acid (LA) is associated with risk of ischemic stroke has not been investigated thoroughly and the results of the few previous studies have been inconsistent.

**Purpose:** The aim of this study was to investigate the association between the content of LA in adipose tissue, which is a long-term marker of endogenous exposure to LA, and the risk of ischemic stroke.

**Methods:** We performed a non-industry-funded, prospective academic study in all-referrals-tracked symptomatic and asymptomatic CS. In asymptomatic CS, intervention was mandated only in case of increased-stroke-risk features. Independent neurologist evaluation was before CAS, at 48h, 30 days, and 12 months. DUS was performed at baseline, 30 days and 12 months. There was external source data verification, external angiographic corelab, and external statistical analysis.

**Results:** Over 11 months, 108 referrals were NeuroVascular Team-recommended for revascularization. Carotid endarterectomy (CEA) was performed in 7 patients while 101 patients (51–86 years, 54.5% female) had Carotid Intraluminal Angioplasty (carotid stenting). Nine patients (43.2%) had a history of previous stroke or TIA possibly related to carotid disease. The number of referrals for CEA increased from 15 in the first 6 months to 29 in the last 6 months. The median follow-up was 6 months (range 1–12 months).

**Conclusion:** Carotid endarterectomy is a safe and effective procedure for the treatment of carotid stenosis. The procedure is associated with a low rate of complications and a significant reduction in the risk of future stroke.