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## 2019 Critical Care Transport Medicine Conference Scientific Forum

The following abstracts are from the poster presentations made at the 27th Annual Critical Care Transport Medicine Conference held April 15–17, 2019, at the Hotel Albuquerque at Old Town in Albuquerque, New Mexico. The Scientific Forum is sponsored by the Air Medical Physician Association, Air & Surface Transport Nurses Association, and International Association of Flight & Critical Care Paramedics. For more information, contact Pat Petersen at [ppeter1111@aol.com](mailto:ppeter1111@aol.com).

### Abstract 1: Analysis of the Usage of a Portable X-Ray System Transported to the Scene by a Physician-Staffed Helicopter

**Objective:** We had the opportunity to use a portable X-ray system. The purpose of this study was to investigate the influence of the use of a portable X-ray system by the staff members of a physician-staffed helicopter (called a doctor helicopter [DH] in Japan) on the activities of the DH staff and the indications for its use in the prehospital setting.

**Methods:** From January 11, 2019 to January 18, 2019 we had temporary access to a portable X-ray system. This period is defined as the investigation time. During the investigation time, a medical chart review was retrospectively performed for all patients who were transported by a DH in Japan. These patients were included as subjects in the present study. We collected data on each subject's sex, age, details of dispatch (to the scene or interhospital transportation), endogenous or exogenous disease status, clinical diagnosis, contents of treatment, whether or not an X-ray study was performed, region of X-ray, treatment at scene, time at the scene, and outcome (survival or death). In addition, we compared age, sex, details of dispatch, endogenous or exogenous disease status, cardiac status (cardiac arrest or no cardiac arrest), treatment, time at the scene (minutes) and outcomes between cases in which an X-ray study was performed (X-ray group) and those in which an X-ray study was not performed (Control group).

**Results:** During investigation period, 30 patients were transported by DH. Thirteen subjects were classified into the X-ray group and 17 were classified into the Control group. There were no significant differences in the sex, age, cardiac status, time at the scene, or outcomes of the two groups. The proportions of patients with exogenous disease and female patients in the X-ray group tended to be greater than those in the Control group; however, neither of these differences was statistically significant. The proportion of cases in which the DH was dispatched to the scene in the X-ray group was significantly greater than that in the Control group.

**Conclusion:** This is the first study to demonstrate that the performance of X-ray studies at the scene did not significantly influence the activities of DH staff and to demonstrate that X-ray studies were performed significantly more frequently when a DH was dispatched to the scene. Future prospective studies involving a greater number of patients and a comparison of the final outcomes are needed.

**Keywords:** portable X-ray; helicopter; treatment

### 2nd Runner-Up Award

#### Abstract 2: Cardiac Arrest During Aeromedical Transport: A 5-year Retrospective Case Review

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**Objectives:** Air emergency medical services (AEMS) are regularly employed in many parts of the world to transport severely ill or injured patients rapidly to definitive care. Out-of-hospital cardiac arrest (OHCA) is a potentially catastrophic event that may occur among a subset of the most severely ill patients that are encountered. This study describes the pre-arrest characteristics, treatments applied, and short-term outcomes of patients with OHCA treated by AEMS.

**Methods:** All adult patients who experienced OHCA at a single, academic aeromedical transport service between 2013–2017 were included in this retrospective analysis. All cases during which an adult patient suffered cardiac arrest occurring from the time of AEMS arrival at the scene or sending facility to hand off at the receiving facility were included. Data including standard Utstein variables, treatments, and short-term outcome were extracted by the authors. Univariate descriptive statistics were computed using SPSS ver. 25.

**Results:** During the 5-year period, 92 cases of adult OHCA were identified among 16,779 transports. The median age of patients experiencing OHCA was 64.5 years [55.3, 63.3]. Among patients transported, the average transport time was 75.4 minutes [63.4, 87.3]. 60 OHCA cases (65.2%) were of medical etiology and 32 (34.8%) were traumatic. Scene calls were the origin for 51.1% of calls; the rest were interfacility transfers. 36/92 patients (39.1%) had multiple cardiac arrests under AEMS care, and OHCA occurred for the first time most often before take-off: 39.1% at the initial scene, 29.3% in transit or loading to aircraft, and in flight 31.5% of the time. 17.4% of the cohort