The Utility of “MARCH PAWS” as a Checklist for Tactical Field Care and Tactical Evacuation

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Introduction

Pararescuemen (PJs) access and treat injuries on and off the battlefield. The use of the mnemonic MARCH PAWS is an effective and complete tool for treating the majority of all battlefield and non-battlefield injuries. Checklists are important in aviation and ensure that procedures are carried out thoroughly and methodically. In the Air Force, organized and complete medical care is also essential on and off the battlefield. MARCH PAWS is an acronym of which each letter corresponds to the following first line diagnoses and treatment protocol terms in order of relevance: Massive hemorrhage, Airway, Respiration, Circulation, Hypothermia/Head injury, Pain, Antibiotics, Wounds, Splints. We undertook this study to review the results of using the mnemonic MARCH PAWS and its effectiveness as a tool for accurately treating injuries, inclusive of trauma, infection, and hypothermia. In addition, treatment incorporating part of the MARCH PAWS mnemonic as well as the frequency of treatment not covered by MARCH PAWS was also observed.

The use of this acronym is equivalent to a checklist approach. Mnemonics have been used since ancient Greece; however, the modern checklist has its origins in aviation. In 1935, a test pilot forgot a pre-flight step and the test flight ended in a crash shortly after takeoff. The fallibility of human memory was the culprit. Providing concise systematic instructions of all critical tasks resulted in the modern checklist. Today, checklists are an integral part of many invasive medical procedures, reducing risks and improving outcomes; substantially reducing rates of infection, errors in dosing, surgical mishaps, and many other preventable mistakes. While checklists can ensure high medical standards, applications in battlefield medicine are not practical. Alternatively, mnemonics are convenient tools that jog medic’s memories under stress, but are often too narrow in scope or too generalized to be used alone. The data collected in this study shows strong evidence that the mnemonic MARCH PAWS is a sufficient algorithm for treating the vast majority of battle related injuries experienced during the timeframe of this study. In conjunction with specific protocols for conditions such as anaphylaxis, ACLS, and CRUSH injuries, tactical medics should be well equipped for nearly any problem they encounter. The utilization of MARCH PAWS has shown to be very effective during the frequent CASEVAC missions flown in Helmand Province, Afghanistan by Pararescuemen and should be taught as the primary algorithms for tactical field care and tactical evacuation going forward.

Methods

This was a retrospective observational study using patient care reports (PCR’s) filled out by Pararescuemen deployed in Helmand Province, Afghanistan between January 2012, and June 2012. Each report was immediately filled out following the mission by Pararescuemen directly involved in the treatment of the patient. Information present in the PCR is a detailed compilation of treatments done before and during CASEVAC; final patient outcomes are not included in these reports. A total of 465 PCRs written by 16 different Pararescuemen were collected and analyzed for various criteria. Information on patient gender, age, category, tango status, mechanism of injury, and treatments received was collected from each PCR. Patient treatment included all treatment from the point of injury until the patient was turned over to higher care by the Pararescuemen. Each treatment was categorized according to where it falls in the MARCH PAWS algorithm, counting a maximum of one count per patient for each category of treatment.

The data collected in this study shows strong evidence that the mnemonic MARCH PAWS is a sufficient algorithm for treating the vast majority of battle related injuries from the point of injury until the patient reaches advanced surgical care. MARCH PAWS includes the full spectrum of trauma medical interventions expected to be performed by first responders at the point of injury and by CASEVAC teams transporting the patient to higher levels of care. MARCH PAWS provides one simple mnemonic for combat lifesavers to follow that is ordered specifically for trauma related injuries.

Additionally, MARCH PAWS proved very effective at treating the vast majority of non-battle related injuries experienced during the timeframe of this study. In conjunction with specific protocols for conditions such as anaphylaxis, ACLS, and CRUSH injuries, tactical medics should be well equipped for nearly any problem they encounter. The utilization of MARCH PAWS has shown to be very effective during the frequent CASEVAC missions flown in Helmand Province, Afghanistan by Pararescuemen and should be taught as the primary algorithms for tactical field care and tactical evacuation going forward.

Results

Of the 465 patients surveyed, 91.7% were treated by MARCH PAWS only, requiring no further treatment. 2.3% of the total patients required treatment beyond the scope of the treatments covered within the MARCH PAWS algorithm. Additionally, 6.0% of patients required no treatment other than transport and monitoring of condition.

Of the 465 patients surveyed, 54.9% sustained battlefield related injuries and 45.1% sustained non-battle related injuries or sickness. Of the patients who sustained battle related injuries, all received treatments within the MARCH PAWS algorithm and no additional treatments. Of the patients who received non-battle related injuries or sickness, 94.9% were treated using interventions within the MARCH PAWS algorithm and 5.1% required treatment outside of the interventions in MARCH PAWS.

The frequency of treatments performed on the patients within this survey is as follows: 58.7% received pain management, 34.4% received circulatory resuscitation, 25.8% received treatment of wounds, 25.5% received hypothermia management, 23.7% received splinting of injuries, 20.6% received massive hemorrhage control, 15.9% received respiratory system management, 14.6% received antibiotics, 6.9% received head injury management, and 6.7% received airway control interventions.

Conclusion

The data collected in this study shows strong evidence that the mnemonic MARCH PAWS is a sufficient algorithm for treating the vast majority of battle related injuries from the point of injury until the patient reaches advanced surgical care. MARCH PAWS includes the full spectrum of trauma medical interventions expected to be performed by first responders at the point of injury and by CASEVAC teams transporting the patient to higher levels of care. MARCH PAWS provides one simple mnemonic for combat lifesavers to follow that is ordered specifically for trauma related injuries.

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Distribution of Interventions Received by Patients from POI to Caevas to Medical Facilities

- No Interventions Required
- All Interventions Covered by MARCHPAWS
- Interventions Beyond MARCHPAWS

Percentage of Patients, 0% to 100% by Each Medical Intervention Was Performed