Further recommendations for trauma training of Indian medical officers and medical students

Robert J Douglas, Tonia M Mezzini, G Anand Kumar, Andrew JA Giles

Sportsmed Sa, 32 Payneham Road, Stepney, South Australia, 5069 (Douglas RJ); Clinic 275, Royal Adelaide Hospital, Adelaide, South Australia, 5000 (Mezzini TM); Vinayaka Missions Kirubananda Vairiyar Medical College Hospital, Salem, Tamil Nadu, India (Kumar GA); Emergency Department, Royal Adelaide Hospital, Adelaide, South Australia, 5000 (Giles AJA)

Corresponding Author: Robert J Douglas, Email: rabs01@hotmail.com

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In a recent article,[1] we have demonstrated a significant difference in the theoretical knowledge of both junior and senior emergency department (ED) medical officers (MOs) from Salem, Tamil Nadu, India, and the Royal Adelaide Hospital (RAH) Adelaide, South Australia, in the management of severely injured trauma patients, when comparing MOs who had completed an ATLS-type program with those who had not undertaken such a program.

We recommended that a program based upon the principles of Advanced Trauma Life Support (ATLS) be integrated into the training of Indian ED MOs, and that such training be viewed as an integral part of medical training.

Studies[2-4] have found that the initial resuscitation and management of severely injured trauma patients is often performed by relatively inexperienced junior MOs, often without adequate consultant (or senior MO) supervision,[5] and Wong[6] has shown that even in a major Australian trauma center, junior MOs, including basic surgery trainees, have minimal exposure to major trauma, restricted access to trauma education, and a limited self-perceived confidence and experience in basic trauma resuscitative procedures.

Medical students too have been shown to benefit from ATLS training. Canadian studies[7,8] have demonstrated that senior medical students perform better in trauma simulation scenarios after completion of the ATLS training. Even attendance at only the lecture series component of ATLS results in an increase in trauma management knowledge among junior medical students.[9] Subsequent research[10] has suggested that this form of training is more effectively directed at senior medical students.

Coates[11] has suggested a similar scheme for the teaching of emergency medicine to Californian medical students in their senior-year rotation.

In addition to the initial training of MOs and/or students in the management of the seriously injured trauma patient, there is a requirement to maintain ATLS-acquired skills. Trauma patient volume has been determined to be the most critical determinant of attrition rate of ATLS-acquired skills.[12] India's high burden of trauma[13] would appear to allow for the ready maintenance of ATLS-acquired skills among the trained staff, however, maintenance of these skills may be difficult, even in centers that receive a large volume of trauma victims, as there are difficulties with the provision of basic trauma equipment and supplies for the management of seriously injured trauma patients. There is also a dearth of the administrative functions required to assure quality trauma care, including trauma registries, trauma-related QI programs, and regular in-service training.[14] Discussion of these issues as well as the desirability of improved training for the pre-hospital staff is outside the scope of this article.

Unfortunately, potential pitfalls exist for the broader introduction of ATLS-type programs into India. Introduction of ATLS-type courses into the United Kingdom resulted in consultants and senior registrars being preferentially offered course places.[15] As stated previously, the initial resuscitation and management of seriously injured trauma patients is often the responsibility of relatively inexperienced junior MOs, those who would appear to gain most from attending an ATLS-type program. Generally, there are far more applicants for ATLS programs than available places, resulting in long waiting lists.[16,17] Cost of the attendance...
at an ATLS program may also be a factor, i.e. difficulties in funding have been experienced by up to 14% of UK trainees.\textsuperscript{[18]} It is known that the funding for ATLS-type programs in India is grossly inadequate,\textsuperscript{[2]} further impacting upon the availability of courses, and upon the funding of course applicants. These problems could be addressed by commencing trauma training in the latter years of medical school, or in the early years of postgraduate medical training. Alternatively, completion of a programme such as the Early Management of Trauma Course (EMTC), an indigenous program based upon ATLS but conceptualised, developed and validated by trained Instructors from the Christian Medical College, Vellore,\textsuperscript{[19]} or attendance at less intensive trauma management programmes such as the Primary Trauma Care Foundation (PTCF)\textsuperscript{[20]} (a course designed to train doctors and other health workers working in rural environments but within the confines of their time, experience and resources) could instead be introduced as a part of Indian Medical training schemes. The PTCF courses concentrates on using minimal resources to maximal effect and it is offered free-of-charge to all countries that wish to use the PTC programme. The PTC manual is also freely available on the Internet, and programmes are run locally, at minimal cost.\textsuperscript{[21]} However, it is unknown if the completion of these programmes results in improvement in trauma management skills, or outcomes. Finally, consideration should be given to international exchange programs designed to assist with trauma management knowledge transfer, similar to the International Emergency Medicine Fellowship Program at the University of Toronto described by Krym, Retezar, and Scott.\textsuperscript{[22]} This would have the joint benefit of improving the theoretical knowledge base of junior Indian MOs and medical students, and as previously outlined,\textsuperscript{[13]} the sheer volume of trauma presenting to Indian hospital EDs would in turn maintain or even improve the practical skills of the training ED physicians.

In conclusion, although there are some barriers to the broader introduction of ATLS-type programs, we recommend that training in the provision of services to severely injured trauma patients be introduced early in the careers of junior Indian MOs, and that introductory programs in trauma management be incorporated into the final years of the medical school curriculum. Further, we recommend that consideration be given to the establishment of exchange programs between ED physicians from mature trauma centers with affiliated institutions in India, in anticipation of a beneficial two-way exchange of the practical and theoretical aspects of the management of the seriously injured trauma patient.

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