

An Introduction to Emergency Medicine

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Recent advances in the identification and characterisation of dental stem cells and in dental tissue- engineering strategies suggest that bioengineering approaches may successfully be used to regenerate dental tissues and whole teeth. As clinically relevant methods for generation of bioengineered dental tissues and whole teeth continue to improve, interest in the application of tissue regeneration increases. This paper describes dental derived stem cells and their characterization.



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Introduction

The World Journal of Medical Education and Research (WJMER) (ISSN 2052-1715) is an online publication of the Doctors Academy Group of Educational Establishments. Published on a quarterly basis, the aim of the journal is to promote academia and research amongst members of the multi-disciplinary healthcare team including doctors, dentists, scientists, and students of these specialties from around the world. The principal objective of this journal is to encourage the aforementioned, from developing countries in particular, to publish their work. The journal intends to promote the healthy transfer of knowledge, opinions and expertise between those who have the benefit of cutting edge technology and those who need to innovate within their resource constraints. It is our hope that this will help to develop medical knowledge and to provide optimal clinical care in different settings. We envisage an incessant stream of information flowing along the channels that WJMER will create and that a surfeit of ideas will be gleaned from this process. We look forward to sharing these experiences with our readers in our editions. We are honoured to welcome you to WJMER.

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An Introduction to Emergency Medicine

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Introducing Emergency Medicine

Emergency medicine is a specialty which encompasses both medicine and surgery, in an acute setting. It exposes physicians to a multitude of presentations varying from trivial medical problems to trauma situations. The two main roles of emergency physicians are to firstly triage patients into those that need immediate care and those that do not. Then, they must fully resuscitate and stabilize any acutely unwell patient to allow transfer of the patient to another area of the hospital, where further care can be provided. Any emergency medicine doctor has to be able to deal with any type of acute presentation, medical, psychiatric or surgical, and so has skill set that ranges basic procedural skills such as inserting a cannula to more complex skills like inserting a chest drain.

Life as an emergency medicine physician

A typical day as an emergency physician can start at any time of day, as there needs to be staff in the department at all times. Shifts vary from 8-12 hours long and can be day, twilight or night shifts. As doctors working in emergency medicine working busy shifts, they have strict rules about rest periods during and in between shifts. This is to ensure that doctors working in emergency medicine are safe to practice when on duty and are not overworked.

Working in emergency medicine means that as a physician you have to be prepared for whatever walks through the doors, which can include major incidents and trauma. Due to the high workload and change of patients, doctors in emergency medicine need to be able to work under pressure and deal with an ever changing situation.

The benefits of working in emergency medicine include the opportunity to do practical procedures, such as

suturing and intubation. Emergency medicine also allows you to work within a highly specialized multi-disciplinary team, especially for trauma patients or resuscitation situations. In these cases it is essential that the emergency physicians work and coordinate the assets of each specialty involved e.g. orthopaedics, radiology, to providing the optimal care to a patient. The emergency medicine physician is the one who leads the team as they are the experts in the emergency scenario.

There are many opportunities for teaching within this environment although it can be difficult to carry out or attend unless scheduled, as it is frequently too busy. Research is not a priority in every emergency department, but there is opportunity for research, especially when it comes to resuscitation protocols, for example therapeutic hypothermia as a method of improving survival rate after cardiac arrest.

Working in such a busy environment does not mean that administrative work is cut to a minimum. Senior emergency medicine physicians are allocated specific time for administrative work for keeping their department organized and prepared for every eventuality.

Although emergency medicine is a stressful job, work-life balance is now much more achievable due to the strict adherence to the European Working Time Directive. Many emergency doctors can easily find a job abroad as there is a great demand around the world, providing opportunities for travel and new experiences.

There is also the possibility of pursuing further learning in a sub-specialty related to emergency medicine, such as anaesthetics, orthopaedics and radiology as these skills will clearly be an asset on the 'shop floor'.

There are minimal opportunities for private work in emergency medicine as this sector is hospital based and unable to provide out of hours care in a private clinical setting.

Training

Applying for emergency medicine involves enrolling in acute common care stem post-foundation programme at CT1 level. To enroll in this programme the application process involves portfolio check, clinical interview and which rank the applicant against the person specifications. This programme includes a year of acute and emergency medicine plus a year of anaesthetics and intensive care medicine and another year in which the trainee shows that they are competent to continue higher specialty training at ST4 level. This usually has training in sub-specialties such as paediatric emergency care. Before applying for specialty training applicants need to have completed College of Emergency Medicine examination (MCEM) and at specialty training level, trainees need to complete fellowship (FCEM) examination to be able to obtain certificate of completion of training (CCT) to become a consultant. In addition to this, training in sub-specialties such as pre-hospital care should be considered early on in training as they are considered an asset.

Emergency medicine is one of the less competitive specialties within a hospital setting. For 2013, competition ratios at CT1 level were 2.6:1 with a total of 534 applications and 203 posts nationwide. At ST3 level

competition ratio in 2012 was 0.5:1 with 106 applications and 198 posts nationwide. This difference in competition ratios at CT and ST levels is explained by some CT trainees switching to other specialties through the Acute Common Care Stem, due to the shifts and because emergency medicine is a relatively new specialty.

The Future

Acute medicine is taking over much of the workload of the emergency department but there is still a need for the initial assessment and treatment of patients coming in the door. The future of the emergency department will rely on new and innovative treatments that can be available for resuscitation of patients, to reduce morbidity and mortality from the actual cause of admission. Current examples include Focused Assessment utilizing Ultrasound for Trauma (FAST) patients within the emergency department. Another important development for emergency medicine is the improvement in equipment, for example defibrillators are much more portable nowadays. There will be a move to ensure emergency medicine and resuscitation need to begin at the site where paramedics make contact with the patient and then continued in hospital.

Ultimately, emergency medicine is a challenging and rewarding job. It requires trainees to be committed to acute medicine and resuscitation of patients, and the lifelong learning in acute surgical scenarios and unpredictable nature of their presentation upon arrival in the department.

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