

[O08] ASSESSMENT AND COST ANALYSIS OF THE HYPER ACUTE DIABETIC FOOT SERVICE TO MANAGE THE SEVERE FOOT ATTACK

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Aim: Assessment and cost analysis of the hyper acute diabetic foot service to manage the severe foot attack. An acute severely infected diabetic foot is now being considered the equivalent of a myocardial infarction (MI). Today, many acute services e.g. (Stroke, MI) are housed in specialist centers in the UK. We report the development of a specialized acute multidisciplinary management team or hyper acute unit consisting of a dedicated diabetologist, orthopaedic & vascular surgeon and in-patient podiatric practitioner.

Methods: In November 2013 thought was given to service development; in May 2014 our service leads (ME, VK, MB) implemented acute pathways for new colleagues following staff expansion. Clear pathways were established for severe acute infection in the non-ischaemic compromised foot that required acute surgery. An emphasis was placed on rapid access to surgery and multi-disciplinary care, ensuring good communication, continued training & on-going audit.

All patients requiring surgical debridement for acute non-ischaemic infection between November 2013 and April 2015 were included and prospectively followed. Our exclusion criteria included all non-acute admission including those requiring surgical reconstruction. We continually recorded demographic details, clinical indices, severity of infection through biochemical markers (CRP, WCC) and diabetic status (HB1Ac) from admission. During the admission episode we recorded Time to Surgery (TTS), Length of Stay (LOS) and Number of Debridement's Per Hospital Episode (NDHE).

Statistical analysis was undertaken in 3-month periods from Nov 2013 covering 6 quarters and conducted using a Student's T – test between time groups. Cost analysis was undertaken using standard NHS England tariffs in 2014 -15.

Results: 60 patients were found to meet the inclusion criteria in that period. On average there were 11.3 (9-16) admissions per quarter, mean age was 57.6. Mean CRP at presentation was 125.2 (72.2-170.2); WCC was 11.6 (10.5 – 12.5); HB1Ac on admission was 10.68 (7.28-11.23). No difference in admission age, CRP, WCC and HBA1c was detected between each quarter (P<0.05).

Prior to service re-development implementation, admission TTS in Aug 2013 was as high as 7 days and the LOS in the first 6 months of the study was 56 days (51.8 – 60.2 days). Following a 3 month period of implementation both LOS & TTS fell in the proceeding 2 quarters. The TTS reduced from a mean of 6 days to 1 day in the final 6 months of observation. LOS fell sequentially to a mean of 28 days in the last quarter; providing a maximal improvement of 22.2 days in the observed time & surgical debridement (NDHE) fell from 2.0 per hospital admission to 1. No patient to date in this group has undergone major amputation on the affected limb.

During the first year, of the study 47 patients required the hyper acute diabetic foot service, the improvement in LOS demonstrated would have led to a potential cost savings of up to £302,586 per annum; the additional reduction in theatre usage would add £29,892 per annum; a combined cost saving of £332,478 per annum.

Conclusion: Joint Multidisciplinary working & early access to surgical debridement are observed to reduce multiple procedures and risk of multiple anaesthetics. Concurrently a reduction in LOS has been achieved with no increased risk of early major amputation. Thus a hyper acute service may improve clinical-efficiency; we would recommend further evaluation of this concept and service.