A MULTIDISCIPLINARY TEAM APPROACH IN THE MANAGEMENT OF DIABETIC FOOT CARE

New Zealand Wound Care Society Conference 2015
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acknowledgment to Dunedin Diabetic foot clinic team.
The World Health Organization and the International Diabetes Federation have stated that up to 85% of diabetic lower extremity amputations are preventable. But every 20 seconds a lower limb is amputated due to complication of diabetes.
WHY MDT’S?

- In a literature review published in 2015 in the World Journal of Diabetes based on the National Institute for Health and Clinical excellence strategies suggest “the management of DFU should be done immediately with a multidisciplinary team as diabetes is a multi-organ systemic disease, and all co-morbidities must be managed” A dedicated team that focuses on preventative care can decrease risks associated with DFU including amputations by 50-80%.

  Yazdanpanah, Nasiri, Adarvishi (2015)

All the major guidelines recommend that patients identified with new DFUs should be referred to a dedicated MDT
THE TEAM

- Orthopedic surgeon
- Orthotist
- Podiatrist
- Diabetic Nurse Specialist
- Vascular surgeon
- WCNS
- Receptionist
- Endocrine consultant
- Microbiologist
- Nurse

Weekly planning meetings
Weekly DFC
OUR AIMS

- Optimal diabetic control
- Effective local wound care
- Infection control
- Pressure relieving strategies
- Monitoring and improving Vascular status
- Integrated Care Approach
- Patient education / support
INTERNATIONAL GUIDELINES FOR MANAGEMENT OF DFU

- Debridement
- Dressings
- Off-loading
- Management of Infection
- Vascular reconstruction
- Amputation
**APPROPRIATE SCREENING TOOL**

- **ACTIVE**
  - **Definition:** Presence of active ulceration, unexplained hot, red, swollen foot with or without the presence of pain (suspected Charcot foot), severe or spreading infection, or critical limb ischaemia.
  - **Action:** Urgent referral to the Multi-disciplinary or Hospital Foot Clinic for active ulceration or suspected Charcot foot. Urgent admission for severe or spreading infection or critical limb ischaemia. Provide written and verbal education with emergency contact numbers.

- **HIGH RISK**
  - **Definition:** Previous amputation or ulceration or more than two risk factors present – e.g. loss of sensation, absent or diminished pulses, PAD, foot deformity with callus, pre-ulcerative lesions, end stage renal failure or Māori ethnicity.
  - **Action:** Annual assessment by a podiatrist. Agreed and customised management plan with a podiatrist according to patient needs. Provide written and verbal education with emergency contact numbers. Referral to specialist if required.

- **MODERATE RISK**
  - **Definition:** One risk factor present – e.g. loss of sensation, absent or diminished pulses without callus or deformity.
  - **Action:** Annual risk assessment by a podiatrist. Agreed and customised management plan outlined by podiatrist according to patient needs. Provide written and verbal education with emergency contact numbers.

- **LOW RISK**
  - **Definition:** No risk factors present - no loss of sensation or absent or diminished pulses.
  - **Action:** Annual screening by a trained Nurse or Health Professional. Agreed self-management plan. Provide written and verbal education with emergency contact numbers. Appropriate access to podiatrist if required.

*Adapted from the Foot Action Group (Scottish Diabetes Group) by PodSIG (NZISSD)*
MULTIDISCIPLINARY ROLES:

- Gain diabetic control sugars were erratic as a result of infection. Diabetic CNS helped to manage insulin levels and dietary changes.
- Vascular status was initially assessed and regularly tested.
- Orthotics helped with off loading options initially wore darco shoe then moon boot.
- Podiatry provided offloading at the wound site and general foot care.
- Orthopaedics reviewed to ensure structural changes were not required.
- Wound care provided by RN/ CNS.
HEALING AFTER FOUR MONTHS
CASE STUDY TWO

- Patient is a 32 year old dairy farmer
- 4 year history of diabetes now on insulin poorly controlled.
- Orthopaedic problems including:
  - Rupture of his right achilles tendon
  - Significant foot ulcers left foot
  - Flexion deformity of his right great toe
MULTIPLE PROBLEMS

FLEXION DEFORMITY

EQUINUS DEFORMITY
CHALLENGES TO HEALING

- Economic pressures faced by patient to provide for his family.
- Type of work; physical outside exposed to many pathogens (yeah right!)
- Reluctance to use offloading options.
- Distance from hospital (3 hour round trip).
- Education and understanding of severity of situation.
MULTIDISCIPLINARY ROLES:

- Gain diabetic control sugars were erratic as a result of infection. Diabetic CNS helped to manage insulin levels and dietary changes.
- Vascular status was initially assessed and regularly tested.
- Orthotics helped with off loading options. Initially wore Darco shoe then moon boot then 6 week treatment with total contact casting.
- Podiatry provided offloading at the wound site and general foot care.
- Orthopaedics performed debridement of left foot plantar ulcer and excision of 2nd metatarsal head.
- Wound care provided by RN/ CNS.
Did it fit the lifestyle?
TOTAL CONTACT CAST
HEALING WITH OFF LOADING
CASE STUDY 3

71 year old male Type 2 Diabetic –on insulin, Independent with ADL’s

- Ex smoker
- CABGx3 And AVR 2007
- Angioplasty R) SFA stenosis 2014
- IHD/ previous MI
- OA lumbar spine
- Hyperlipidaemia
- End stage diabetic retinopathy
DIABETIC FOOT ULCER CLINIC HISTORY

- Referred to the DFC post 3rd toe amputation and extended debridement
- Attended regular appointments for wound management with excellent healing for the first 6 months
- Ultra sound debridement with view to grafting.
- Then very slow healing.
- X-ray revealed - osteomyelitis.
SLOW TO HEAL

16.7.14

4.7.14

19.9.14
OSTEOMYELITIS
MULTIDISCIPLINARY ROLES:

- Gain diabetic control sugars were erratic as a result of infection. Diabetic CNS helped to manage insulin levels.
- Vascular status was initially assessed and very poor history included multiple angioplasty’s and debridement.
- Orthotics helped with off loading options initially wore darco shoe and had to have specialised shoes made to model the foot shape following surgery.
- Podiatry provided offloading at the wound site and general foot care.
- Orthopaedics reviewed regular and advised on x-rays and osteomyelitis performed bone biopsy further bone debridement to isolate organism.
- Wound care provided by RN/ CNS initially a VAC and ULFUD.
- Microbiologist review and Vancomycin prescribed initially IV then long term low dose oral abs.
WHAT HAVE WE LEARNT SO FAR?

- Team work is everything
- Communication between all involved
- Learning from each other
- Constant peer review
- The surface is often tip of the iceberg in complex DFU
- One stop shop
- Patients love it
- Direct referral
- Increased profile throughout district
- Other colleagues know who to refer too