

Conservative Treatment of Driveline Infections: A Single Centre Experience

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PURPOSE

Left Ventricular Assist Device-associated infections (LVADI) range from driveline infection (DLI) to endocarditis. DLI is a particularly common complication, representing a burden for patient and caregiver. Occurrence of DLI in studies ranges from 20% to 60% of patients¹; fortunately most remain superficial and can be managed with antibiotics. Results after transplantation are comparable in patients with and without DLI, but registry results showed that the mortality is higher in those with a device infection or mediastinitis².

DLI increases pain at the exit site of the driveline, increases total medical expense, and sometimes results in a fatal systemic blood infection and stroke³.

The purpose of this study was to evaluate conservative management of DLI.

METHODS

From February 2009 to September 2017, 90 patients underwent LVAD implant (77% as destination therapy). Periodic follow-ups were carried out. ISHLT Infection Disease Working Group Classification and the DLI classification proposed by Sharp Memorial group (Stage 1-5) were adopted.

All patients received antibiotics according to microbiological specimens and underwent CT-PET scan to evaluate the extent of DLI infection .

RESULTS

Cumulative days of support were 56277 (94% male, mean age 62±8 years, EPPY 0.46), 32 pts (35%) were treated for LVADI, and 4 pts VAD-related mediastinitis (population in Figure 1). LVADI were diagnosed within the first year after implantation in 20 pts (62%). DLI was detected in 28 pts (87%). In this group, 4 pts underwent driveline externalization, 3/4 of these had a poor initial presentation with deep tissue infection and skin-to-driveline fistulae, but a successful outcome was observed. The remaining twenty-four pts had preservation of the original exit site, with a remission rate of 92%. Of these, 11 pts with early stage (1 or 2) driveline infection were treated with Cutimed Sorbact® (BSN medical; Stage 1) or Silverlon® (Argentum Medical; Stage 2) wound dressing twice a week, resulting in complete clinical and microbiological recovery. Two patients were treated with negative wound pressure therapy (NWPT) and CutimedSorbact®, with a good late outcome. In eleven patients, a new conservative, yet novel approach was carried out: a skin incision was performed 5 cm medially and parallel to the driveline approximately 5 cm from the exit site in order to expose the velour and drain the abscess, followed by Silverlon® gauze dressing and NPWT (VAC VERAFLOR®, Acelity) with instillation of 0.05% sodium hypochlorite solution every hour, 24 hours/day. As sterilization occurred, reconstruction was performed in 2/11 pts using a reconstructive tissue matrix (STRATTICE®, Allergan) and at 60-day follow-up negative CT/PET and clinical remission were observed. (Picture 1-6: incision and wound dressing; Picture 7: 1 yr follow-up).

DISCLOSURES

I will not discuss off label use and/or investigational use of the devices used in this study

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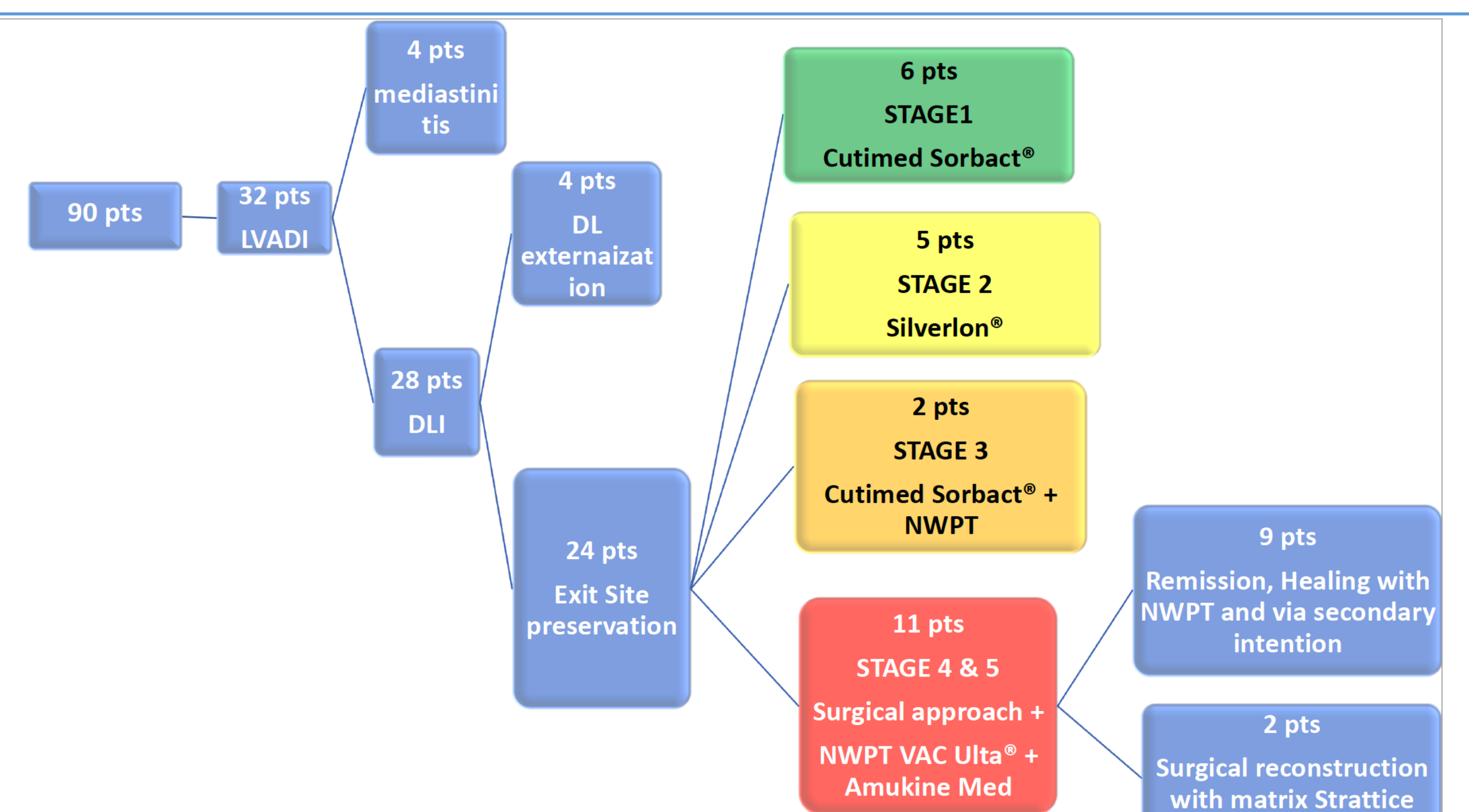


Figure 1



Picture 2



Picture 3



Picture 4



Picture 5



Picture 6



Picture 7

DISCUSSION

The diagnosis of a DLI is often challenging, above all in early stages. It is essential to detect the infection focus early in order to initiate appropriate treatment, reduce the need of surgical treatment of DLI and increase the survival outcome. Prevention of DLI is of utmost importance. To our knowledge, careful sterile management of the driveline exit site is very important, particularly in case of DLI. NPTW is a therapeutic technique that prompts healing the wounds.

CONCLUSIONS

Conservative therapy with NWPT is becoming a less invasive and effective tool for the treatment also of deep driveline infections and pocket/pump infections, reducing the need for pump exchange. A standardization of the diagnosis and treatment is necessary to improve the desired outcomes.

MATERIALS

1. Cutimed Sorbact® (BSN medical®)
2. Silverlon® (Argentum Medical®)
3. ActiV.A.C.® Therapy Unit (KCI®)
4. V.A.C.Ultra™ (KCI®)
5. Amukine Med® (0.05% sodium hypochlorite solution, Amuchina®)

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