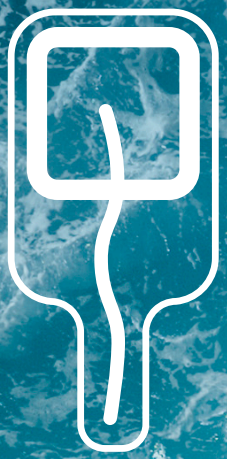
dialtec™
unrivalled protection



DIALTEC™ WATERPROOF WOUND PROTECTION

THE BENEFITS OF THE DIALTEC™ WATERPROOF WOUND PROTECTION

The Problem

Dialysis patients, who often include elderly or those taking strong drugs, have a weakened immune system and are an easy target for bacterial attack. Legionella or water borne bacteria must not enter the patient via the exit site wound, otherwise there could be grave consequences for the patient's health. Most clinicians advise their patients to keep their catheters dry and clean to reduce the risk of infection. Patients are often instructed to refrain from showering in order to keep their catheters dry.
From a clinician's standpoint, this is a prudent recommendation, but from a patient's perspective, it is not realistic. Some physicians allow their patients to shower, advising them to protect catheters and exit site wounds from water as best they can. This often results in patients attempting to cover catheters and exit site wounds with homemade remedies such as clingfilm or plastic bags and tape. These homemade dressings are inconsistent at performing their intended function of keeping the catheter and exit site wound dry. The Dialtec™ Wound Protection Pouch constitutes a total water seal to allow showering for haemodialysis patients with Tesio or central venous catheters. It is latex free and allows full freedom of movement in the shower.

The Background

Patients requiring dialysis continues to increase with almost 30,000[1] patients in the UK, over 500,000[2] in the US and 1.3 million[3] worldwide now being treated.

The Renal Association recommends that all patients with end stage kidney disease who commence haemodialysis or are on long-term haemodialysis should dialyse with an arteriovenous fistula (AVF) as first choice, an arteriovenous graft (AVG) as second choice, a tunnelled venous catheter as third choice and a no tunnelled temporary catheter as an option of necessity.

The ideal vascular access should provide safe and effective therapy by enabling the removal and return of blood via an extracorporeal circuit. Vascular access should be easy to use, reliable and have minimal risk to the individual receiving haemodialysis. However, the provision of good quality access, whilst it is a fundamental aspect of the treatment of haemodialysis patients, remains difficult to achieve. Native access, in particular arteriovenous fistulae, requires prior planning and has a high primary failure rate. Arteriovenous grafts utilizing replacement of synthetic or biological material in conjunction with native vessels again require planning and surgical expertise. Venous catheters (both tunnelled and non-tunnelled) are in common usage and in a smaller number of patients remain the only form of access that is available. It is recommended that central venous catheters should be employed as a method of last resort for longer term vascular access to reduce the overall risk of infectious complications and the burden of central venous stenosis in haemodialysis patients.

For venous catheters, the exit site remains a potential source of infection. The exit site should be cleaned with Chlorhexidine 2%. The exit site should be covered with a non-occlusive secure dressing to protect the exit site between dialysis. Patients should be educated on the importance of maintaining the integrity of the dressing and the importance of reporting of problems with the exit site.

The annual Staphylococcus aureus bacteraemia rate in the prevalent haemodialysis population should be less than 2.5 episodes per 100 HD patients and less than 1.0 for MRSA over 2 years.
A central venous catheter uses a thin, flexible tube that is placed into a large vein (usually in the neck, under the skin). It may be recommended if dialysis must be started immediately and the patient does not have a functioning AV fistula or graft. This type of access is usually used only on a temporary basis. In some cases, however, there can be problems maintaining an AV fistula or graft,

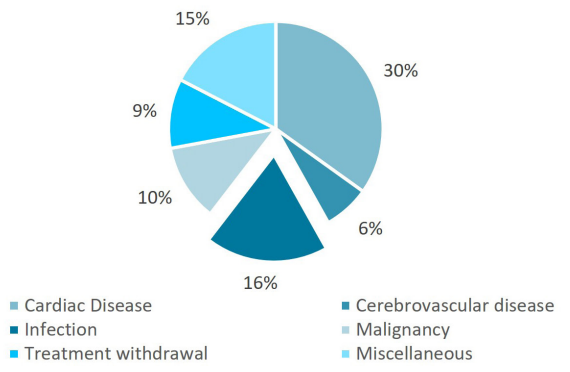
and the central venous route is used for long-term access. Catheters have the highest risk of infection and the poorest function, compared with other access types; they should be used only if a fistula or synthetic graft cannot be maintained.[4]

Bloodstream Infections

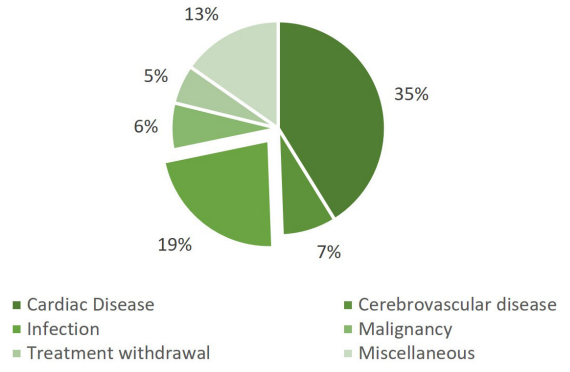
Infection remains the second leading cause of death in patients with established renal failure (ERF) who receive renal replacement therapy (RRT). The high rates of systemic infection reported in haemodialysis patients are related to their impaired immune system, the high number of invasive procedures they are exposed to and the type of vascular access used. The most common type of complication for haemodialysis patients with central venous catheters is catheter-related bloodstream infection (CRBSI), with an incidence rate of 0.46 to 30 per 1000 catheter-days, or in 4.3% to 26% of placed catheters. It is well known that venous catheters increase dialysis associated infections due to the permanent nature of this portal and as a foreign body. The rate of infection in patients using temporary venous catheters is considerably higher than those on definitive access. In all groups of patients, the risk is high, but magnified in the venous catheter populations.

Patients contract around 250,000 Blood Stream Infections each year in the U.S. and 60% of these were attributed to micro-organisms from the patient's skin. A single central line associated bloodstream infection is estimated to cost $45,814. Worryingly, bloodstream infections associated with the insertion and maintenance of CVADs are a major cause of patient deaths (up to 1 in 4 deaths per patient infection). Microorganisms that colonise catheter hubs and the skin surrounding the central venous access device insertion site are the cause of most Catheter Related Blood Stream Infections. Skin cleansing and disinfection of the insertion site is therefore one of the most important measures for preventing catheter related infection. The insertion site should remain clean and dry at all times. Hence regular showering for these patients with adequate precautions taken to protect the catheters and dressings is a necessity both for mental wellbeing and good health. For patients receiving Renal Dialysis venous access becomes their lifeline. Haemodialysis is still the most common method of dialysis used to treat end-stage renal disease.

Cause of death in prevalent dialysis patients in Europe



Cause of death in prevalent dialysis patients in Latin America



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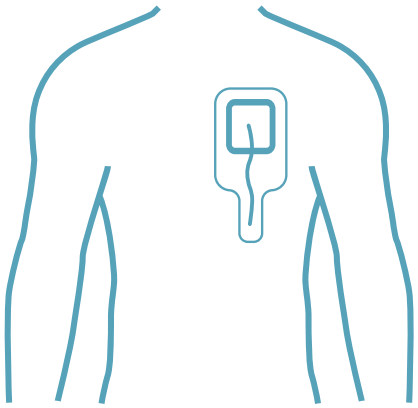
In the prevalent RRT dialysis population, cardio-vascular disease accounted for 30% of deaths, infection 16% and treatment withdrawal 9%. The one-year death rate for prevalent dialysis patients in the UK appeared to be lower than in similar patients in the USA.[6]

In a survey conducted by SafeHome.org Team in 2018, they found that the shower curtain and shower floor harboured 60 times more bacteria than the toilet seat.[7]

The Solution

Dialtec™ was specifically designed to meet a rising demand in haemodialysis patients who required protection from infection during showering. Protecting patients from infection is not only a necessity for their wellbeing but also it reduces the serious financial burden associated with the treatment of an infected patient.

The Dialtec™ pouch has been specially designed for haemodialysis patients who use a Central Venous Catheter or Tesio Line. Dialtec™ is cost effective and designed to protect the integrity of the catheter insertion site while showering, by keeping the dressing clean and dry thereby reducing the need for unnecessary handling of the site which is associated with an increased risk of infection. In the US, central line associated bloodstream infections are a serious burden on the Health System costing an estimated $1.85 billion a year and having a major impact on the availability of beds because infected patients have to spend, on average, an extra 11 days in hospital. Furthermore, infected patients cost 3 times more to treat than uninfected patients and infections are becoming difficult to treat because of an increase in antimicrobial resistance.

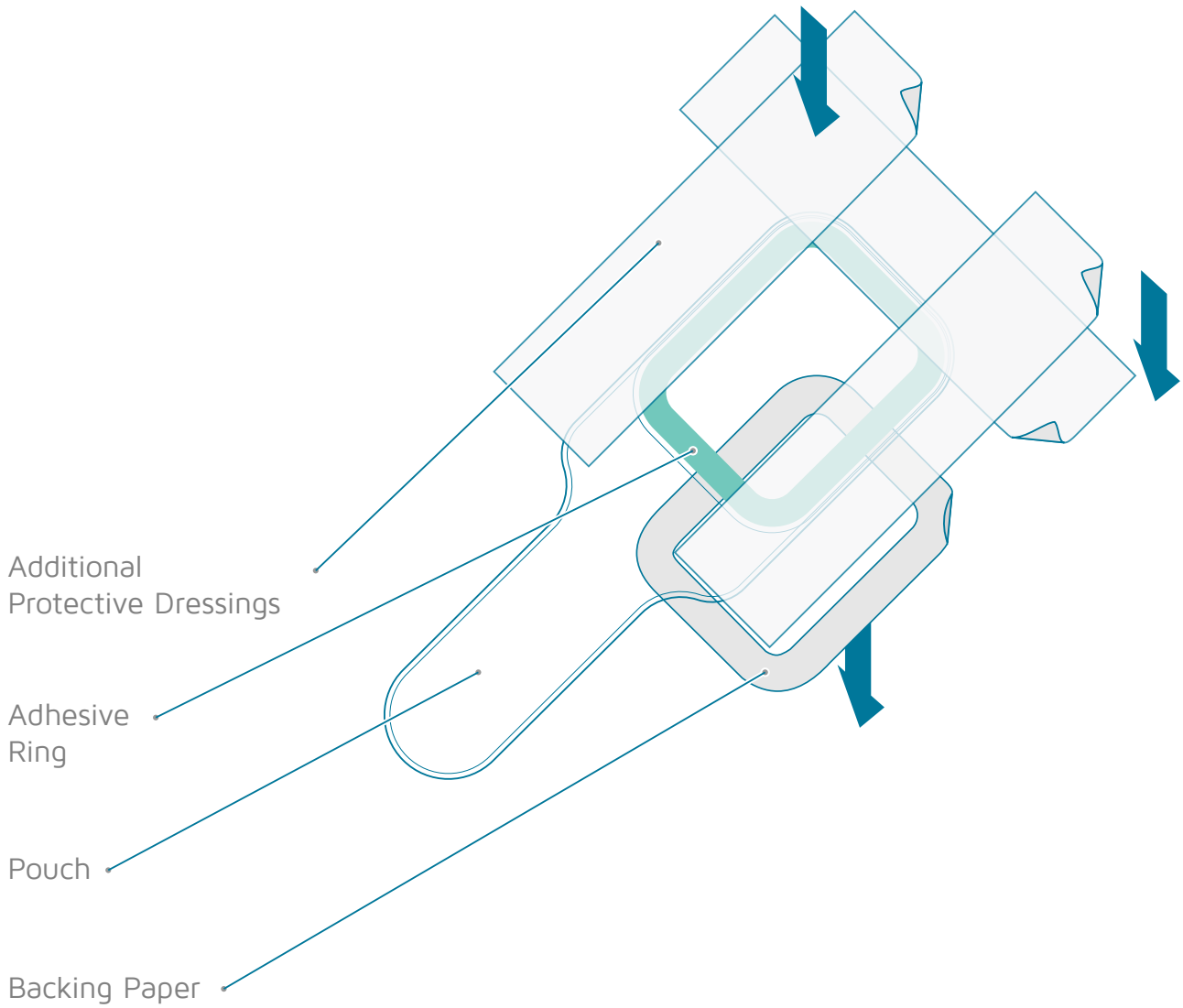


The pouch comes in three sizes to accommodate small, standard and large sized dressings:

- DTSP 0 (Small) 120mm x 90mm
- DTSP 1 (Standard) 120mm x 90mm
- DTSP 2 (Large) 140mm x 120mm

Dialtec™ pouches are classified as Class I under the EU Medical Devices Regulations 2017/745, USA/FDA Title 21 of the Code of Federal Regulations (CFR), Parts 862-892 and are disposable single use devices.

Dialtec™ pouches help maintain a water and contamination free zone around the catheter exit site incision and are well received in use by patients and nurses alike, strongly resisting patient infection from waterborne pathogens. Dialtec™ pouches are supplied with Dialtec™ adhesive remover wipes (also available separately from distributors code DTSP3) to help reduce any discomfort on pouch removal and clean residual adhesive off skin around the primary catheter skin securement dressing.



[1] Kidney Care UK statistics (https://www.kidneycareuk.org)
[2] Kidney Fund US statistics (https://www.kidneyfund.org)
[3] Kidney International (https://www.kidney-international.org/article/S0085-2538(15)51276-3/pdf)
[4] The renal Association – Vascular Access for Haemodialysis January 2015 (https://renal.org/guidelines)
[5] Cause of death in prevalent dialysis patients (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6386019/)
[6] Survival and Causes of Death of UK Adult Patients on Renal Replacement Therapy in 2010: National and Centre-Specific Analyses).
[7] SafeHome.org Bacterial surface culture analysis (https://www.safehome.org)

FIND OUT MORE ABOUT DIALTEC™

SCAN TO VISIT THE MICROSITE

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