

Diabetes Singapore

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SIZE MATTERS

AWAK versus HD versus PD

'Downsizing' can be a very feared word. Tell that to the many workers who were victims of downsizing during the last global economic downturn when companies worldwide trimmed their workforce. For patients on dialysis, a downsized, and get this, portable wearable dialysis machine seems like a proverbial dream. Call it a dream machine, if you will. Imagine the convenience of being able to sleep, work and play while wearing a dialysis machine. Multiply the number of hours saved by the millions of patients who would otherwise be hooked up to a dialysis machine (not to mention the immeasurable improvement in the quality of life) and one can begin to fathom the life-changing impact a wearable dialysis machine can offer.

For a number of years, companies have been trying to develop portable dialysis machines by downsizing the huge refrigerator-sized dialysis machines to something more portable (about the size of a suitcase) and home-based. Haemodialysis (HD), in which the dialysis machine filters of the toxic waste in the blood, is not without its problems such as control of blood pressure and anaemia, but it keeps millions worldwide alive. A major bugbear is the need for patients to travel three times a week to the dialysis centre and spending literally half their waking hours hooked up to tubes and machines.

PD (Peritoneal Dialysis) being home-based offers some advantages compared to HD. In PD, the peritoneum (inner lining of the abdomen) is used to filter out toxins. A sugar-based cleansing solution is introduced into the abdominal cavity via an implanted tube. The waste-filled solution is then regularly filtered out a few times a day. Only a small percentage of patients are suitable for PD and the nagging problem is that of abdominal infection.

Consider then a device weighing just 1 kg that runs on two 9-volt batteries, it is called AWAK or Automatic Wearable Artificial Kidney. The Diabetes Singapore editorial team is excited for dialysis patients about the prospect of AWAK being available commercially. We hope for the millions of patients in the world whose lives depend on them being regularly hooked up to machines that this dream machine will indeed come to fruition. See page 21 for a glimpse of hope.

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