USE OF INDIGENOUSLY MANUFACTURED APD CYCLER IN PAKISTAN: THE BAHRIA TOWN INTERNATIONAL HOSPITAL EXPERIENCE.

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Background:

Patients with end stage renal disease have the option of utilizing peritoneal dialysis (PD) as their mode of renal replacement therapy. There are basically 2 types of PD which include chronic ambulatory peritoneal dialysis (CAPD) and automated peritoneal dialysis. APD is the most preferred type of PD utilized globally because of convenience of nighttime therapy but requires a cycler machine. Unfortunately the APD cycler is not available in Pakistan, hence APD utilization in Pakistan is zero. Byonyks Private Limited have recently manufactured an indigenous device for APD in Pakistan. This abstract is the first experience with that device in Pakistan at Bahria Town International Pakistan Lahore after approval from the local institutional research board and ethical committee (IRBEC).

Methods:

Patients who were already on CAPD and required an APD cycler for a known indication to switch were recruited after getting approval from the IRBEC of Bahria Town International Hospital Lahore for the use of Byonyks APD Cycler. All the recruited patients gave informed consent for the use of the APD cycler on compassionate grounds. One patient recruited had multiple AV access failures and had to initiate urgent start on PD because of severe hyperkalemia and fluid overload. The PD cycler was used in that patient while the patient was on the ventilator after informed consent from the next of kin to achieve maximal ultrafiltration with short and frequent exchanges. All therapies were done under the direct supervision of the consultant nephrologist and in the presence of the technical team from the Byonyks Pvt Ltd. All patients were reviewed in terms of whether they experienced any pain, irritation, itching, cloudy effluent, fever, ultra filtration problems or peritonitis episode during or within 7 days of their respective APD cycler use.

Results:

A total of 7 patients underwent APD using the indigenous cycler for a variable amount of time depending on the indication and patient' s need. For time duration and patient characteristics see table 1. The total time spent on the APD cycler comprising of all patients was 431 hours. None of the patients had an untoward effect that was life threatening. No episode of Peritonitis with in 7 days post therapy was noted. One patient reported discomfort in the outflow phase of cycle which improved with software modification for drain parameters. No episode of itching, irritation, cloudy effluent, fever or ultrafiltration failure was reported during the study period on any patient. The longest current patient is a 21 year old male who has undergone 280 hours of APD over the last 3 months period and is continuing on with the therapy.

Conclusion:

The use of the indigenous APD cycler did not lead to any untoward event and all the patients involved exhibited adequate and efficient dialysis.

No	Initials	Age/Sex	Date of 1st Therapy	Total # of Therapies	Combined Hours	Reason For APD	Outcome	Untoward Event
1	RK	34/F	21/09/2020	01	5 Hours	High transporter	Planned 1 time APD cycler therapy. Now on CAPD	None
2	MS	29/F	04/06/2021	04	24 Hours	High transporter	Passed away due to non-PD related co-morbidity	None
3	SS	35/F	20/04/2021	09	70 Hours	Inadequate dialysis on CAPD	Passed away due to non-PD related co-morbidity	None
4	ML	48/M	09/08/2021	10	45 Hours	Inadequate dialysis on CAPD	Transplanted	None
5	MA	55/M	14/03/2020	01	2 Hours	Inadequate dialysis on CAPD	1st patient to undergo indigenoues APD in Pakistan. Transplanted.	None
6	AJ	18/M	01/11/2021	60	280 Hours	High transporter	Ongoing daily Home APD	Mild outflow pain once. Pain free for last 220 hours.
7	SA	30/F	17/07/2020	01	5 Hours	Poor ultrafiltration.	Planned One time cycler therapy. Now on CAPD	None