



Disorders of the Pleura

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A Comparison Between Two Types of Tunneled Indwelling Pleural Catheters for Management of Malignant Pleural Effusions

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PURPOSE: Malignant pleural effusion (MPE) is a common cause of quality of life deterioration in patients with advanced cancer. Management options include chemical pleurodesis with a sclerosing agent such as doxycycline or talc and also the placement of tunneled indwelling pleural catheters (TIPCs). Catheters can be used for outpatient management of MPE, reducing hospital length of stay (LOS) may result in spontaneous pleurodesis. The PleurX (Becton, Dickinson and Company, Franklin Lakes, NJ) TIPC was approved in 1997 by the Food and Drug Administration (FDA) for this purpose and uses plastic vacuum bottles for the drainage; this catheter was used in most studies comparing TIPC vs. other modalities for MPE. Another FDA-approved TIPC system is the Aspira (Bard Access Systems, Salt Lake City, UT), which employs a manually operated vacuum pump for drainage. We conducted a single-center retrospective study with the objective to compare the efficacy and safety of these two different types of catheters.

METHODS: Patients that received TIPCs by the interventional radiology department of our hospital from January 2013 to March 2015 were identified in the local database and a chart review was performed to record characteristics and outcomes. Patients without a diagnosis of malignancy or with pleural effusions of cardiac origin were excluded from the study. The study was approved by the Institutional review board of our center.

RESULTS: Of 43 patients identified, 25 patients were included in the study. Of those 10 (40%) were female, with a mean age of 62.7 years (range 30-92). Median ECOG performance status (PS) was 3; 23 (92%) patients had poor PS. Median body-mass index (BMI) was 25.5 and average albumin was 2.6g/dl (lower reference limit 3.6). All patients had moderate to large sized pleural effusion on chest imaging and 21 (84%) had dyspnea requiring supplementary oxygen, with median respiratory rate of 24 breaths/min and median heart rate 105 beats/minute. 9 patients had lung cancer, 7 had breast cancer, 4 had gastrointestinal cancer, 2 had lymphoma, 2 had genitourinary malignancy, and 1 had melanoma. In 20 of the patients the TIPC was placed after initial small-bore catheter thoracostomy, as per institutional protocol. 17 (68%) patients received Aspira TIPC and 8 (32%) patients received PleurX TIPC. Both groups of patients had similar characteristics. Symptom relief was similar in both groups. Median LOS was 9 days in Aspira group (AG), and 13 days in PleurX group (PG). 7 patients in AG developed catheter-related complications such as infection at catheter site (2) or catheter malfunction (5), while 2 patients in PG had catheter infection or malfunction. In the post-TIPC placement period the median chest X-ray count was 1 in AG and 2.5 in PG. 4 patients died in the AG group and 3 in the PG.

CONCLUSIONS: In our sample, outcomes and safety were similar for patients receiving either type of TIPC, while LOS appears to be different. A prospective study with larger sample size and balanced sized subgroups is needed for further comparisons.

CLINICAL IMPLICATIONS: For the management of MPE, both the FDA approved TIPC types have similar efficacy and safety profile.

DISCLOSURE: The following authors have nothing to disclose: Sushilkumar Gupta, Charalampos Floudas, Abhinav Chandra
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