Neglected impact of chest drainage therapy

As medicine has advanced over the last decades the habit of remaining with underwater seal systems becomes a significant issue impacting the overall therapy success. Interestingly enough health care practitioners have only hesitantly adopted the advantages of modern chest drainage systems to preserve respiratory function and hemodynamic stability.

Frequently used underwater seal chest drainage systems impose great variability amongst practices and do not allow for evidence based decision making adding clinical risks to patients.

Medela paves the way – over more than 10 years

![Evidence Based Research](image1)

Santhora (TDS) Designed to mobilise patients

Thopaz Designed to change the clinical practice

Thopaz+ Designed to allow comprehensive and standardized care

Continued leadership role by Medela

And here is the kicker

Clinical applications of predictive algorithms for chest drainage management have shown to be feasible by facilitating enhanced recovery of patients, improved discharge planning, saving costs and by preventing adverse events.

Ref.: Gilbert et al. Oral presentation: Predicting Pulmonary Air Leak resolution using Transpleural air flow data after lung resection. AATS 2017

with 68% sensitivity 84% specificity which is expected to be higher with fluid data from Thopaz+

Ref.: Stahl et al. Optimized chest tube management – Results of the Thopaz-NICE-study. urn:nbn:de:bvb:20-opus-141348

Based on a predictive model on 1419 therapies from APAC, EU and the US

> 50% of all patients reached a global pull the drain criteria @ 6h post-operatively

Ref.: Stahl et al. Optimized chest tube management – Results of the Thopaz-NICE-study. urn:nbn:de:bvb:20-opus-141348

> 50% of all patients reached a global pull the drain criteria @ 6h post-operatively


Many disciplines are affected

Emergency

Pulmonology

Other chest surgeries, e.g. trauma

Thoracic surgery

Cardiac surgery

Millions of chest drainage therapies are performed annually, sometimes even saving lives

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#analytics, #BigData, #datamanagement, #individualpatienttherapy, #algorithm, #learningsystems, #AI

Medical Vacuum Technology for Healthcare Professionals

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Clinical decisions are based on patient data & economic drivers of healthcare systems

NEW treatment schemes like ERAS ask for minimized recovery time, reduced complications, enhanced mobility and faster patient independence.

DIGITAL is recommended

Collaborative proposal by ESTS, AATS, STS and GTSC
"Most important feature of digital devices is their capability to store information allowing for bedside analysis and instantaneously decision making on when to remove the chest tube, eventually leading to discharge of the patient."

Canadian Agency for Drugs and Technologies in Health (CADTH) notes a "[...] consistent decrease in duration of chest tube placement and length of hospital stay compared to traditional chest drainage systems; [...] associated by reduced hospital costs [...]"
Ref.: CADTH Rapid Response Report

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100% of patients had a more positive perception when treated with an electronic chest drainage system

AWMF guideline
The German societies DGT, DGP, DRG, DGIM recommend digital drainage for treatment of primary and secondary pneumothorax and for patients with intermittent air leaks.
Ref.: AWMF S3-Leitlinie

ERAS guideline for thoracic surgery
as announced @ the annual ESTS meeting, Ljubljana, 2018

NICE recommends Thopaz+ portable digital chest drainage device
"The case for adopting Thopaz+ for managing chest drains is supported by the evidence. Thopaz+ can reduce drainage time and length of stay in hospital, and improves safety for people with chest drains. Its use may also improve clinical decision-making through continuous, objective monitoring of air leaks and fluid loss."

Allows for cost savings of up to £ 550 per patient

Improves safety for patients with chest drains

Shortens hospital stay due to shorter chest tube duration

100% of patients had a more positive perception when treated with an electronic chest drainage system