POINT-COUNTERPOINT:
The role of diuresis in management of reexpansion pulmonary edema

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GENERAL INFORMATION

POINT-COUNTERPOINT is a form of post-publication peer review process. Readers are welcome to write letters and comments with regards to previously published OPUS 12 Scientist articles. Authors of the original article are then given the opportunity to answer questions and comments from the readers, and both the readers’ comments and the authors’ answers are published simultaneously, allowing for comparison and contrasting of any divergent opinions within the scientific debate.


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POINT ➤ REEXPANSION PULMONARY EDEMA (RxPE): MANAGEMENT ISSUES

Deepak Aggarwal, MD

Stawicki and his colleagues1 have nicely elaborated the points and concepts on reexpansion pulmonary edema. This condition, though well documented as well as encountered by physicians at all the levels of health care, is still less appreciated and poorly managed. Some points in this article need further discussion so that the entity is better understood.

The authors have advocated the use of careful diuresis as one of the treatment modalities for reexpansion pulmonary edema. Whereas, according to available literature, the condition is mainly caused by alteration in capillary permeability2 due to hypoxic3 and mechanical damage2 to alveolar-capillary membrane. This leads to extravasation of protein rich fluid out of the blood vessels into the lung tissue. Increased hydrostatic pressure plays less important role in the development.4-5 Moreover, due to movement of fluid out of blood vessels, there is a state of hypovolemia which presents clinically in the form of tachycardia, hypotension and oliguria. So the use of diuretics in such circumstances is not likely to be beneficial in any way. Use of diuretics in the treatment of this condition is not generally recommended and they may even deteriorate the condition.6 There has also been case report of fatal results with its use.7 Also, use of term ‘careful diuresis’ does not give clear picture to the readers.

Even though there is vast literature available, the pathophysiological mechanisms and management of this preventable complication are still the areas of active research. There is vast scope for us to learn from the available literature, so that the condition is better understood and effectively managed. Also more research is needed to elucidate the less clear aspects of this entity.

POINT: REFERENCES


COUNTERPOINT ➤ AUTHORS’ REPLY

S. P. Stawicki, MD, B. Sarani, MD, and B. M. Braslow, MD

Dr. Aggarwal brings up a very important question: “Is diuresis detrimental or helpful in the setting of RxPE?” In the original article, we reported that careful diuresis is one of many treatment modalities that can be considered in the setting of RxPE. We continue to support this position, with certain clarifications that were not included in the original article.

We agree that empiric diuresis in the setting of RxPE may indeed be detrimental. In any clinical setting, administration of diuretics should be considered with great caution, and some combination of resuscitation endpoints (clinical; hemodynamic; laboratory – lactate acidosis, base deficit, etc.; invasive line monitoring – pressure, stroke volume measurements; echocardiographic – left ventricular status) should be followed while the patient is undergoing diuresis. Further, if a patient with acute RxPE demonstrates clinical signs of fluid sequestration and intravascular volume depletion, diuretics would be contraindicated.

Just as much as we agree that diuresis should not be used in the setting of RxPE when not clinically indicated, we generally disagree with the statement that all diuresis is detrimental in the setting of RxPE. In fact, there are numerous reports of successful adjunctive use of diuresis in the setting of RxPE, with good clinical results and no reported adverse events.8-12 Because judicious and appropriate administration of diuretics in the setting of RxPE appears to be associated with satisfactory outcomes, we continue to support the use of diuresis in this setting provided that the patient does not demonstrate any signs of hypovolemia or ongoing need for volume resuscitation. Again, it is important to continue to monitor clinical, laboratory, and other endpoints of resuscitation while the patient is undergoing diuresis.

We hope that we addressed your questions adequately and that we were able to clarify major points relevant to the discussion of diuretic use in the setting of RxPE.

COUNTERPOINT: REFERENCES