Abstract Submission No. : 9100
May 26(Thu), 10:40-12:40 PG Education 5 (Intervention Nephrology)

The Role of POCUS (Point Of Care Ultrasonography) in Hemodialysis Unit

Eun Jung Kim
Hallym University Dongtan Sacred Heart Hospital, Korea, Republic of

1. Definition and Goal of POCUS:

Point of Care ultrasound (POCUS) has recently been highlighted as an attractive bedside diagnostic tool to help vascular access assessement ,cannulation as well as assessment of volume status. POCUS is the real-time bedside ultrasound examination performed by physician to find immediate answers for clinical questions. (i.e Is the usable segment to be cannulated ? yes /no)

The goal of POCUS is to confirm the differential diagnosis by buidiling on the information disclosed by history and physical examination at the bedside. This is not a comprehensive and detailed ultrasound examination. Thus, POCUS is usually performed by physicians to determine to diagnosis and immediate management and decrease complication rates.

2. First part : POCUS for vascular access:

The actual use of POCUS in hemodialysis units can be described as below
- assessment of the maturation of a new AVF
  (assessment for the diameter and skin depth)
- assessment if a new AVG is deep or edematous
- ultrasound-guided cannulation of difficult-to-cannulate accesses
- identification of hematoma, pseudoaneurysm and the location of side branch

3. Second part : POCUS for volume status assessment:

Volume overload in hemodialysis patients is an independent risk factor for cardiovascular mortality. The assessment of fluid status is an important issue for nephrologists who are confronted with in every day in the dialysis setting. A lot of methods have been utilized to assess hemodialysis patient's volume status. Unfortunately, there is no strong reliable method of assessing volume status in hemodialysis patients. Getting the optimal volume status is a big challenge in the dialysis setting. POCUS can be best evaluated by assessment of the heart, abdominal veins, and lungs.

1) Lung ultrasound
- predominant artifact pattern : A lines vs B lines
- B lines : pulmonary congestion, pleural effusion
2) Focused cardiac ultrasound
- pericardial effusion
- IVC diameter and collapsibility
3) Venous doppler
- assessment of hepatic veins, portal veins and intra-renal veins
- venous excess ultrasound grading system