‘Virtual’ Point of Care Ultrasound Course in Pediatric Nephrology

A Core Curriculum for Residents in Pediatrics & Nephrology

Brochure

4th - 5th June 2022

Dr. Sidharth Kumar Sethi
Senior Consultant
Pediatric Nephrology &
Pediatric Kidney Transplantation
Kidney and Urology Institute
Medanta - The Medicity Hospital, Gurugram, India

Dr Rupesh Raina
Consultant Nephrologist
Adult-Pediatric Kidney Disease/Hypertension
Department of Nephrology
Cleveland Clinic Akron General and
Akron Children’s Hospital, Akron, Ohio, USA

Website: www.picunephrologycourses.com

Invitation

Dear Friends & Colleagues!

It is our great pleasure to invite you to participate in **"Point of Care Ultrasound in Pediatric Nephrology: A Core Curriculum"** being scheduled on 4-5 June, 2022.

This Educational Initiative shall have Modules including
a) Live Sessions to be attended on 4-5 June 2022, followed by
b) OSCE Based MCQs test (to be completed within 7 days).

The Modules are based on participatory learning methodology. The skills acquired on attending live lectures shall be tested by OSCE [Objective Structured Clinical Examination] online (to be given within 7 days of meeting). The Modules shall be accessed by a link provided to you on your e mail after registration to the course. The completion certificates shall only be provided to attendees who score more than 75% on OSCE examination (to be completed within 7 days of meeting).

More than 500 delegates are expected to attend the online course. Multiple researchers and clinicians from the fields of Critical Care Pediatric Nephrology will attend and presentations will be given by renowned professionals.

We look forward to having an academically enriching and interactive virtual Educational experience!

See you virtually in the course!

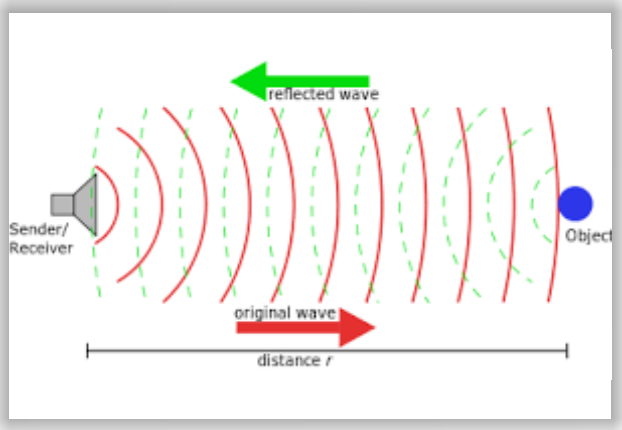
Course Directors

Dr. Sidharth Sethi
Pediatric Nephrology & Pediatric Kidney Transplantation
Kidney Institute Medanta,
The Medicity Hospital, Gurugram, India

Dr Rupesh Raina
Pediatric Nephrology
Akron Children's Hospital
Cleveland, Ohio, USA

DAY 1: 4th June 2022
'THE BASICS'

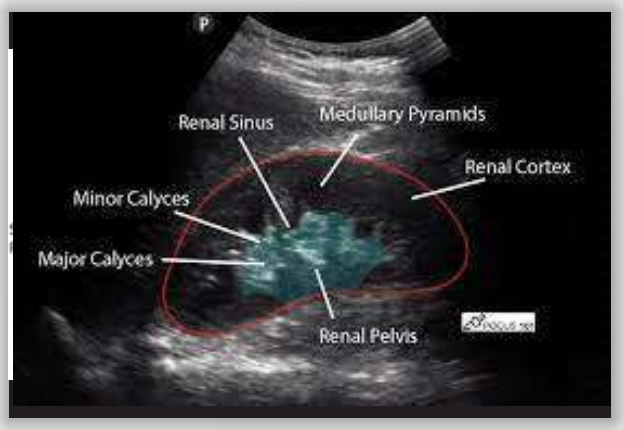
MODULE-1
Ultrasound physics and knobology



- Ultrasound wave properties, transducer types
- Introduction to modes: B, M, color flow, power Doppler, spectral Doppler
- Image optimization: depth, zoom, gain, time gain compensation
- Image orientation: organ presets, standard conventions
- Basics of image interpretation: acoustic impedance, relative echogenicity of various tissues
- Common ultrasound artifacts, including acoustic shadowing, acoustic enhancement, mirror image, reverberation, ring-down, and twinkle artifacts

MODULE 2
Pediatric Renal ultrasound

- Technique: probe selection, positioning, and description of movements
- Organ anatomy: gross and sonographic correlation in long and short axes
- Kidney size and appearance: length, cortical and parenchymal thickness, cortical echogenicity
- Core pathologies: hydronephrosis, stone, cyst, mass, free fluid in hepatorenal and splenorenal recesses



DAY 1: 4th June 2022
'THE BASICS'

MODULE 3
Pediatric Renal allograft ultrasound

- Technique: probe selection, positioning, and description of movements
- Allograft anatomy: expected differences compared with native kidney (e.g., prominent collecting system), proximity to bladder and pelvic organs
- Allograft core pathologies: hydronephrosis, perinephric collections, basic evaluation of vascular anastomosis, and resistive index

MODULE 4
Pediatric Urinary Bladder Ultrasound

- Urinary bladder anatomy: gross and sonographic correlation in long and short axes
- Bladder volume calculation, urinary retention, Foley catheter malposition, differentiating pelvic ascites from urine

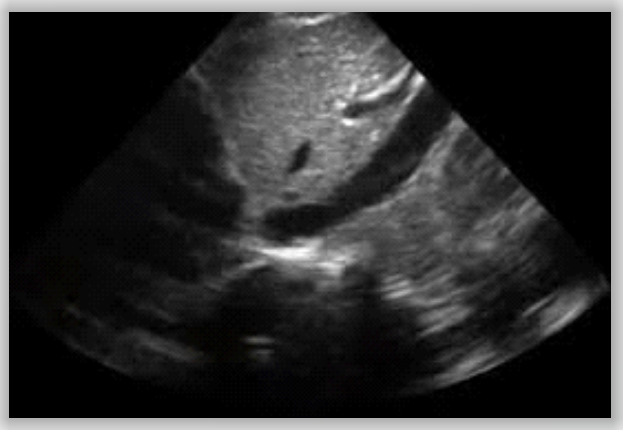
DAY 1: 4th June 2022
'THE BASICS'

MODULE 5
Pediatric Lung ultrasound

- Technique: probe selection, positioning, and description of movements
- Sonographic zones of evaluation: rationale behind the existence of multiple scanning systems, correlation between various techniques
- A and B lines: physics underlying artifact generation, i.e., reverberations and ring-down, cardiogenic versus pneumogenic B lines
- Pleural effusion: simple effusion, spine sign, recognition of complex/exudative effusions
- Consolidations: differentiating lobar pneumonia and atelectasis, static and dynamic air bronchograms, subpleural consolidations

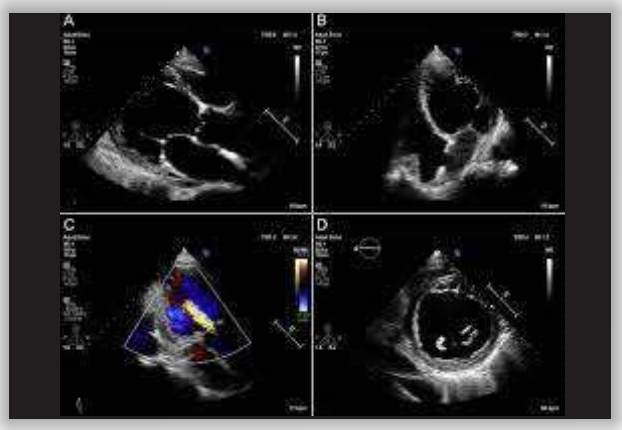
MODULE 6
IVC

- Technique and indications
- Limitations
- Pitfalls of isolated inferior vena cava ultrasound



DAY 1: 4th June 2022
'THE BASICS'

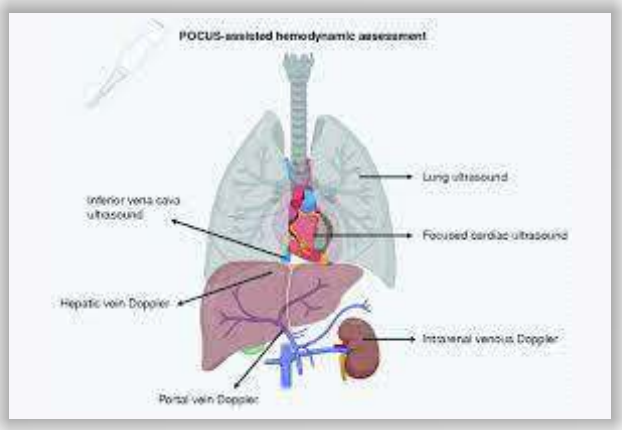
MODULE 7
Focused pediatric cardiac ultrasound



- Rationale and limitations
- Technique: probe and preset selection, probe positioning to acquire basic cardiac views namely, parasternal long axis, parasternal short axis, apical 4 and 5 chamber, subxiphoid 4 chamber, and inferior vena cava
- Utility of M-mode and color Doppler
- Cardiac anatomy: gross and sonographic correlation of the basic views
- Evaluation of 5 Es

DAY 2: 5th June 2022
'APPLICATIONS'

MODULE 8
Integrative assessment of fluid volume status



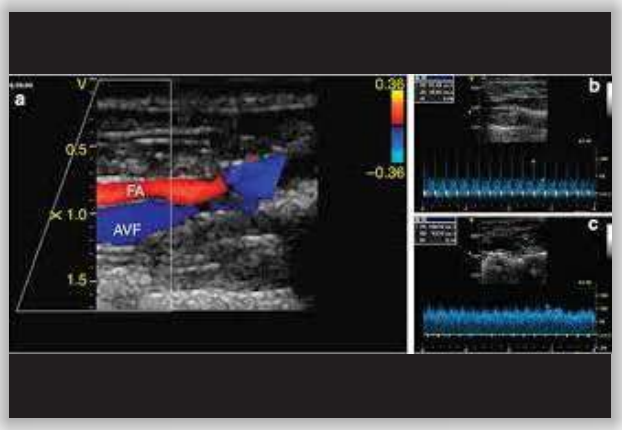
- Rationale behind using multiorgan POCUS for objective evaluation of fluid status
- Patient studies illustrating the role of integrating findings from focused cardiac ultrasound, lung ultrasound, and limited abdomen to assess fluid status
- Limitations of basic POCUS and introduction to hemodynamic assessment using Doppler ultrasound

MODULE 9
Quantification of venous congestion using Doppler ultrasound

- Rationale behind venous congestion assessment, effect of fluid overload on downstream organs, overview of venous excess Doppler ultrasound (VExUS)
- Technique: probe selection, preset, positioning, standard, and alternative imaging windows
- Components of VExUS:

DAY 2: 5th June 2022
'APPLICATIONS'

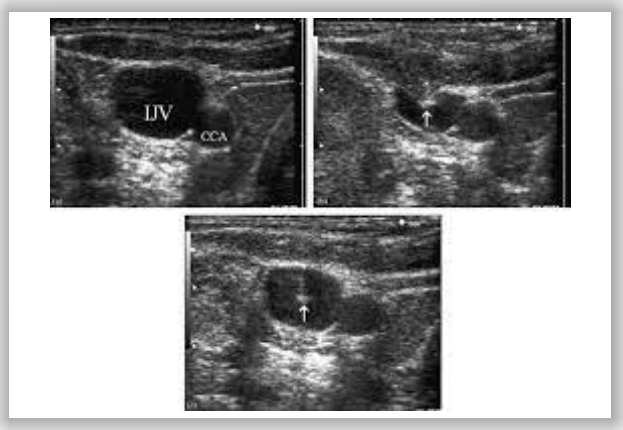
MODULE 10
Sonographic evaluation of the Pediatric dialysis access



- Principles of spectral Doppler focusing on pulsed wave Doppler, scale adjustment, aliasing, angle correction
- Anatomy of vascular access: gross and sonographic correlation in long and short axes
- Technique: probe selection, measurement of depth, diameter, volume flow
- Core pathologies: pseudoaneurysm, hematoma, thrombosis, narrowing and turbulent flow; assessment of maturity of a newly placed access. Detailed assessment of stenosis/vein mapping is beyond the scope of POCUS
- Peritoneal dialysis access: abdominal wall anatomy, sonographic appearance of normal catheter and cuff, tunnel infection, abscess, pericatheter leaks

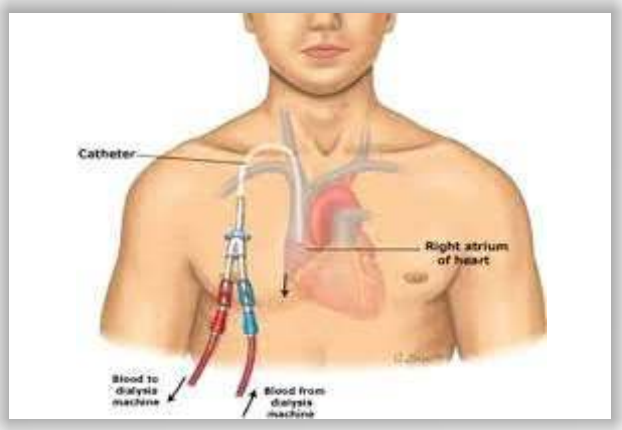
MODULE 11
Ultrasound-guided Temporary hemodialysis catheter placement

Temporary hemodialysis catheter placement: probe selection, vessel selection, visualization of the needle tip, technique of catheter insertion, confirmation of correct placement by cardiac ultrasound



DAY 2: 5th June 2022
'APPLICATIONS'

MODULE 12
Ultrasound-guided Permacath hemodialysis catheter placement



Catheter placement: probe selection, vessel selection, visualization of the needle tip, technique of catheter insertion, confirmation of correct placement by cardiac ultrasound

MODULE 13
Ultrasound-guided kidney biopsy

Renal biopsy (native and transplant): probe selection, site selection, visualization of the renal cortex, vasculature, needle tip and surrounding anatomy (e.g., bowel loop interference in the case of allograft), evaluation of postbiopsy hematoma/Doppler signs of active bleeding along the needle track

DAY 2: 5th June 2022
'APPLICATIONS'

MODULE 14
Incorporating POCUS in Pediatric Nephrology Training & Practice

DAY 1: 4th June 2022
'THE BASICS'

CORE CURRICULUM

Time [India]	Module	Speaker
5:00pm-5:40pm [30+10]	Ultrasound physics and knobology	Sumer Sethi, India
5:40pm-6:20pm [30+10]	POCUS in Pediatric Nephrology	Juan Infante, USA
6:20pm-7:00pm [30+10]	Pediatric Renal allograft ultrasound	Vivek Sharma, India
7:00pm-7:40pm [30+10]	Pediatric Urinary Bladder Ultrasound	Hamidreza Badeli, Iran
7:40pm-8:20pm [30+10]	Fluid Overload in Critical Children: Basics	Rupesh Raina, USA
8:20pm-9:00pm [30+10]	Pediatric Lung ultrasound	Maninder Dhaliwal, India
9:00pm-9:40pm [30+10]	Application of POCUS in Neonates with AKI & Fluid overload	Yogen Singh, USA
9:40pm-10:20pm [30+10]	POCUS in Pediatric COVID	Marissa DeFreitas, USA

DAY 2: 5th June 2022
'APPLICATION OF POCUS IN PEDIATRIC NEPHROLOGY'

CORE CURRICULUM

Time [India]	Module	Speaker
5:00pm-5:40pm [30+10]	Focused pediatric cardiac ultrasound & IVC Assessment	Yasser Elsayed, Canada
5:40pm-6:20pm [30+10]	Integrative Assessment of Fluid Volume Status	Abhilash Koratala, USA
6:20pm-7:00pm [30+10]	Quantification of venous congestion using Doppler ultrasound	Abhilash Koratala, USA
7:00pm-7:40pm [30+10]	Ultrasound-guided Temporary hemodialysis catheter placement	Veena Raghunathan, India
7:40pm-8:20pm [30+10]	Ultrasound-guided Permacath hemodialysis catheter placement	Virender S, India
8:20pm-9:00pm [30+10]	Sonographic evaluation of the Pediatric dialysis access	Tapish Sahu, India
9:00pm-9:40pm [30+10]	Ultrasound-guided kidney biopsy	Sidharth Sethi, India
9:40pm-10:30pm	Incorporating POCUS in Pediatric Nephrology Training & Practice: Panel Discussion	

For Online Registration, kindly visit:

www.picunephrologycourses.com

Conference Secretariat

Dr. Sidharth Sethi

E: sidsdoc@gmail.com

M: +91-9868306235

Conference Manager:

Mr. Milan Singh

M: +91-9910609688, 9931812971