Sri Lakshmi Narayana Institute of Medical Sciences

`

Date: 01.10.2019

From

Dr. V. Raghavendran
Professor and Head,
Department of Pediatrics,
Sri Lakshmi Narayana Institute of Medical Sciences,
Bharath Institute of Higher Education and Research,
Chennai.

.

To

The Dean,
Sri Lakshmi Narayana Institute of Medical College
Bharath Institute of Higher Education and Research,
Chennai.

Sub: Permission to conduct value-added course: Office Practice in Pediatric Nephrology

Dear Sir,

With reference to the subject mentioned above, the department proposes to conduct a value-added course titled: Office Practice in Pediatric Nephrology for final year MBBS students from November to December 2019. We solicit your kind permission for the same.

Kind Regards

Dr. V. Raghavendran

FOR THE USE OF DEANS OFFICE

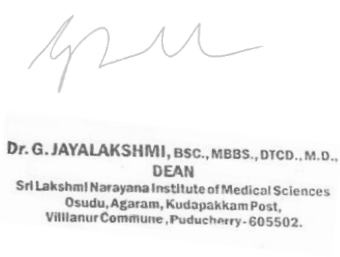
Names of Committee members for evaluating the course:

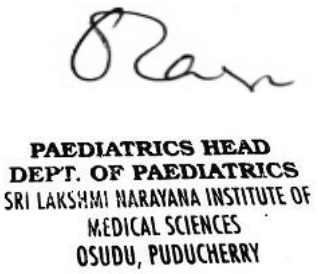
The Dean: **Dr. Jayalakshmi**

The HOD: **Dr. V. Raghavendran**

The Expert: **Dr. Karuppiah Pandi**

The committee has discussed about the course and is approved.





Dean	Subject Expert	HOD
(Sign & Seal)	(Sign & Seal)	(Sign & Seal)

OFFICE OF THE DEAN

Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,
PUDUCHERRY - 605 502.
[Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME (P -II) dt. 11/07/2011]
[Affliated to Bharath University, Chennai - TN]

Circular

06.10.2019

Sub: Organising Value-added Course: Office Practice in pediatric Nephrology. reg

With reference to the abovementioned subject, it is to bring to your notice that Sri Lakshmi Narayana Institute of Medical Sciences, **Bharath Institute of Higher Education and Research** is organizing **"Office Practice in pediatric Nephrology"** to be conducted over 2 months - November to December 2019.

The application must reach the institution along with all the necessary documents as mentioned. The hard copy of the application should be sent to the institution by registered/ speed post only so as to reach on or before 20th October 2019. Applications received after the mentioned date shall not be entertained under any circumstances.

Dean

Dr. G. JAYALAKSHMI, BSC., MBBS., DTCD., M.D.,
DEAN
Sri Lakshmi Narayana Institute of Medical Sciences
Osudu, Agaram, Kudapakkam Post,
Villianur Commune, Puducherry - 605502.

Encl: Copy of Course content

Course Proposal

Course Title: **Office Practice in Pediatric Nephrology**

Course Objective:

1. To enhance the knowledge regarding diagnosis and management of common kidney related disorders with which children present to the OPD.
2. To make the target students well adversant with the Indian guidelines regarding management of pediatric kidney diseases.
3. To assess the impact of the course by conducting post course assessment of the target students and by getting their feedback.

Course Outcome: Improvement in knowledge about management of common pediatric kidney related disorders encountered in office practice

Course Audience: Final year MBBS students of academic year 2019

Course Coordinator: Dr. V. Raghavendran

Course Faculties with Qualification and Designation:

1.Dr. V. Raghavendran, MD Paediatrics, Professor & HOD

2.Dr. Karuppiah Pandi, MD paediatrics, Associate Professor

3.Dr. Satyamanasa Gayatri Vinay S

Course Curriculum/Topics with schedule (Min of 30 hours)

Sl No	Date	Topic	Faculty	Time	Hours
1.	01.11.2019	Common nephrology problems in Indian children – broad overview	Dr. V. Raghavendran	4-5p.m	1
2.	02.11.2019	Nephrotic syndrome – definition, etiology, pathology	Dr. Karuppiah Pandi	2-3p.m	1
3.	03.11.2019	Nephrotic syndrome – clinical features, lab investigations, treatment of 1st episode	Dr. Satyamanasa Gayatri Vinay S	4-6p.m	2
4.	04.11.2019	Nephrotic syndrome – response to steroid, complications and their management	Dr. V. Raghavendran	4-6p.m	2
5.	06.11.2019	Management of frequently relapsing and steroid dependent nephrotic syndrome	Dr. Karuppiah Pandi	4-6p.m	2
6.	07.11.2019	Nephrotic syndrome – management of steroid resistant cases	Dr. Satyamanasa Gayatri Vinay S	4-5p.m	2
7.	08.11.2019	UTI – definition, etiology, risk factors, clinical features	Dr. V. Raghavendran	4-5P.M	1

8.	09.11.2019	UTI – lab diagnosis, imaging recommendations, treatment	Dr. Karuppiah Pandi	4-6 p.m	2
9.	10.11.2019	UTI - complications and long term sequelae, VUR	Dr. Satyamanasa Gayatri Vinay S	4-6 p.m	2
10	11.11.2019	Pediatric hypertension	Dr. V. Raghavendran	4-5 p.m	1
11	13.11.2019	CAKUT, antenatal hydronephrosis	Dr. Karuppiah Pandi	4-5 p.m	1
12	14.11.2019	AKI, CKD	Dr. Satyamanasa Gayatri Vinay S	4-6 p.m	2
13	15.11.2019	Pre course and Post Course evaluation, Feedback analysis from Likert scale	Dr. V. Raghavendran	2-4 p.m	2
		Practical Class			
13.	16.11.2019	Case discussion – steroid sensitive nephrotic syndrome	Dr. Karuppiah Pandi	3-4 pm	1
14.	17.11.2019	Case discussion – steroid resistant nephrotic syndrome	Dr. Satyamanasa Gayatri Vinay S	3-4 pm	1
15.	18.11.2019	Case discussions – UTI, CAKUT	Dr. V. Raghavendran	2-4 pm	2
16.	20.11.2019	Case discussions – AKI, CLD	Dr. Karuppiah Pandi	2-4 pm	2
17.	21.11.2019	Assessment and giving feedback in weaker areas	Dr. Karuppiah Pandi	2-6 pm	4
		Total			30 hrs

Reference Books (Minimum two)

1. **Nelson Textbook of Pediatrics**
2. **Pediatric Nephrology – Aravind Bagga**

VALUE ADDED COURSE FOR OFFICE PRACTICE IN PEDIATRIC NEPHROLOGY

1. Name of the programme & Code

Office Practice in Pediatric Nephrology and PECO11

2. Duration & Period

30 hrs (November – December 2019)

3. Information Brochure and Course Content of Value Added Courses

Enclosed as Annexure- I

4. List of students enrolled

Enclosed as Annexure- II

5. Assessment procedures:

Multiple choice questions- *Enclosed as Annexure- III*

6. Certificate model

Enclosed as Annexure- IV

7. No. of times offered during the same year:

Once (November – December 2019)

8. Year of discontinuation: 2020

9. Summary report of each program year-wise

Value Added Course (November – December 2019)					
Sl. No	**Course Code**	**Course Name**	**Resource Persons**	**Target Students**	**Strength & Year**
1	PECO11	Office Practice in Pediatric Nephrology	Dr Karuppiah Pandi	Final year MBBS	20 (Nov – Dec 2019)

10. Course Feed Back

Enclosed as Annexure- V

ASSISTANT PROFESSOR
DEPARTMENT OF PAEDIATRICS
SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES

(Dr. Karuppiah Pandi)

PAEDIATRICS HEAD
DEPT. OF PAEDIATRICS
SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES
OSUDU, PUDUCHERRY

COORDINATOR
(Dr. V. Raghavendran)

Annexure 1

OFFICE PRACTICE IN PEDIATRIC NEPHROLOGY

PARTICIPANT HAND BOOK

BIHER SLIMS

COURSE DETAILS

Particulars	Description
Course Title	Office practice in pediatric nephrology
Course Code	PECO11
Objective	1. Management of steroid sensitive nephrotic syndrome in children 2. Management of urinary tract infection in children.
Further learning opportunities	Management of Acute kidney injury and end stage renal disease in children
Key Competencies	On successful completion of the course the students will have the knowledge about management of nephrotic syndrome and UTI as per Indian guidelines
Target Student	Final year MBBS Students
Duration	30 hrs (November – December 2019)
Theory Session	20 hrs
Practical Session	10 hrs
Assessment Procedure	Multiple choice questions

Management of steroid sensitive nephrotic syndrome

Nephrotic syndrome is an important chronic disease in children. About 80% children with idiopathic nephrotic syndrome show remission of proteinuria following treatment with corticosteroids, and are classified as 'steroid sensitive'. Most patients have multiple relapses, placing them at risk for steroid toxicity, systemic infections and other complications. A small proportion of patients who are not steroid sensitive (steroid resistant) are also at risk for similar complications and renal insufficiency. Most pediatricians would encounter few patients with nephrotic syndrome in their practice. They should be familiar with management of these patients and be aware of situations in which referral to a pediatric nephrologist is required. Long-term management of these patients should thereafter be a joint effort between the pediatrician and the pediatric nephrologists.

Nephrotic syndrome is characterized by heavy proteinuria, hypoalbuminemia (serum albumin < 200 mg/dL) and edema. Nephrotic range proteinuria is present if early morning urine protein is 3+/4+ (on dipstick or boiling test), spot protein/creatinine ratio >2

mg/mg, or urine albumin excretion >40 mg/m2 per hr (on a timed-sample). Precise quantitative assessment of proteinuria, including 24-hr urine protein measurement is seldom necessary.

Initial Evaluation - A detailed evaluation is necessary before starting treatment with corticosteroids. The height, weight and blood pressure should be recorded. Regular weight record helps monitor the decrease or increase of edema. Physical examination is done to detect infections and underlying systemic disorder, e.g., systemic lupus erythematosus, Henoch Schonlein purpura, etc. Infections should be treated before starting therapy with corticosteroids. Investigations recommended at the initial episode include: (i) urinalysis; (ii) complete blood count, blood levels of albumin, cholesterol, urea and creatinine. Estimation of blood levels of antistreptolysin O and C3 is required in patients with gross or persistent microscopic hematuria. Appropriate tests are performed, if necessary, for associated conditions (e.g., chest X-ray and tuberculin test, hepatitis B surface antigen, antinuclear antibodies). Urine culture is not necessary unless the patient has clinical features suggestive of a urinary tract infection.

Treatment of the Initial Episode - Adequate treatment of the initial episode, both in terms of dose and duration of corticosteroids, is important. Evidence from multiple studies suggests that appropriate therapy at the first episode of nephrotic syndrome is an important determinant of the long-term course of the disease. Medication: The standard medication for treatment is prednisolone or prednisone. The medication is administered after meals to reduce its gastrointestinal side effects. The use of methylprednisolone, dexamethasone, betamethasone, triamcinolone or hydrocortisone is not recommended. There is also limited evidence on the efficacy or benefits of therapy with deflazocort for nephrotic syndrome. Treatment regimen: Various treatment regimens have been used for the treatment of the initial episode of nephrotic syndrome. The International Study for Kidney Diseases in Children had originally recommended a regimen comprising of four-weeks each of daily and alternate day steroid therapy, which was used for almost three decades. Controlled studies later suggested that prolongation of initial steroid therapy for 12 weeks or longer is associated with significantly reduced risk for subsequent relapses. However, prolonged treatment with steroids is

associated with a higher frequency of adverse event. The Cochrane Renal Group, on systematic analysis of the literature, recommends that the duration of initial prednisolone therapy should be for a minimum of 12 weeks. It further suggests that the benefits of sustained remission and reduction in relapse rates are superior if alternate-day treatment is not stopped abruptly at 12 weeks, but tapered over the next 2-4 months. It is emphasized that none of the studies included in this analysis was placebo controlled, most lacked allocation concealment and were not powered to evaluate side effects of prolonged treatment. The debate regarding appropriate dose and duration of steroid treatment is not resolved. Other regimens are being examined that reduce the risk of relapse without increased side effects. Based on current evidence and opinion, the Group recommends that the initial episode of nephrotic syndrome be treated with prednisolone at a dose of 2 mg/kg per day (maximum 60 mg in single or divided doses) for 6 weeks, followed by 1.5 mg/kg (maximum 40 mg) as a single morning dose on alternate days for the next 6 weeks; therapy is then discontinued. The benefits and safety of

prolonged initial steroid therapy, beyond 12 weeks, require confirmation from further studies.

Treatment of Relapse - The patient should be examined for infections, which should be treated before initiating steroid therapy. Appropriate therapy of an infection might rarely result in spontaneous remission, thereby avoiding the need for treatment with corticosteroids. Prednisolone is administered at a dose of 2 mg/kg/day (single or divided doses) until urine protein is trace or nil for three consecutive days. Subsequently, prednisolone is given in a single morning dose of 1.5 mg/kg on alternate days for 4 weeks, and then discontinued. The usual duration of treatment for a relapse is thus 5-6 weeks. Prolongation of therapy is not necessary for patients with infrequent relapses (see below). In case the patient is not in remission despite two weeks treatment with daily prednisolone, the treatment is extended for 2 more weeks. Patients showing no remission despite 4 weeks' treatment with daily prednisolone should be referred for evaluation.

Infrequent Relapsers - Patients who have three or less relapses a year and respond promptly to prednisolone are managed using the aforementioned regimen for each relapse. Such children are at a low risk for developing steroid toxicity.

Frequent Relapsers and Steroid Dependence - Patients with frequent relapses or steroid dependence should be managed in consultation with a pediatric nephrologist. It is usually not necessary to perform a renal biopsy in these cases. Following treatment of a relapse, prednisolone is gradually tapered to maintain the patient in remission on alternate day dose of 0.5-0.7 mg/kg, which is administered for 9-18 months. A close monitoring of growth and blood pressure, and evaluation for features of steroid toxicity is essential. If the prednisolone threshold, to maintain remission, is higher or if features of corticosteroid toxicity are seen, additional use of the following immuno-modulators is suggested. (a) Levamisole is administered at a dose of 2-2.5 mg/kg on alternate days for 12-24 months(7-9). Co-treatment with prednisolone at a dose of 1.5 mg/kg on alternate days is given for 2-4 weeks; its dose is gradually reduced by 0.15-0.25 mg/kg every 4 weeks to a maintenance dose of 0.25-0.5 mg/kg that is

continued for six or more months. Occasionally, it might be possible to discontinue treatment with corticosteroids. The chief side effect of levamisole is leukopenia; flu-like symptoms, liver toxicity, convulsions and skin rash are rare. The leukocyte count should be monitored every 12-16 weeks. (b) Cyclophosphamide is administered at a dose of 2-2.5 mg/kg/day for 12 weeks(10). Prednisolone is co-administered at a dose of 1.5 mg/kg on alternate days for 4 weeks, followed by 1 mg/kg for the next 8 weeks; steroid therapy is tapered and stopped over the next 2-3 months. Therapy with cyclophosphamide should be instituted preferably following remission of proteinuria. Total leukocyte counts are monitored every 2 weeks; treatment with cyclophosphamide is temporarily discontinued if the count falls below 4000/mm3 . An increased oral fluid intake and frequent voiding prevents the complication of hemorrhagic cystitis; other side effects are alopecia, nausea and vomiting. The risk of gonadal toxicity is limited with a single (12 weeks) course of cyclophosphamide. The use of more than one course of this agent should preferably be avoided. In view of its toxicity, the use of chlorambucil, unless under close supervision, is not

recommended. (c) Calcineurin inhibitors: Cyclosporin (CsA) is given at a dose of 4-5 mg/kg daily for 12-24 months. Prednisolone is co-administered at a dose of 1.5 mg/kg on alternate days for 2-4 weeks; its dose is gradually reduced by 0.15- 0.25 mg/kg every 4 weeks to a maintenance dose of 0.25-0.5 mg/kg that is continued for six or more months. Occasionally, treatment with corticosteroids may be discontinued. Estimation of trough blood levels of CsA is required in patients with suspected noncompliance, unsatisfactory response or nephrotoxicity (increase in serum creatinine by 30% or more from the baseline). Trough (12-hr) CsA levels should be kept between 80- 120 ng/mL(12). Side effects of CsA therapy include hypertension, cosmetic symptoms (gum hypertrophy, hirsutism) and nephrotoxicity; hypercholesterolemia and elevated transaminases may occur. Estimation of blood levels of creatinine is required every 2-3 months and a lipid profile annually. A repeat kidney biopsy, to examine for histological evidence of nephrotoxicity, should be done if therapy with calcineurin inhibitors is extended beyond 2 years. Tacrolimus is an alternative agent, administered at a dose of 0.1-0.2 mg/kg daily for 12-24 months. Side effects include hyperglycemia, diarrhea and rarely

neurotoxicity (headache, seizures). The use of tacrolimus is preferred especially in adolescents, because of lack of cosmetic side effects. Blood levels of creatinine and glucose should be estimated every 2-3 months. (d) Mycophenolate mofetil (MMF) is given at a dose of 800-1200 mg/m2 along with tapering doses of prednisolone for 12-24 months(7,14). The principal side effects include gastrointestinal discomfort, diarrhea and leukopenia. Leukocyte counts should be monitored every 1-2 months; treatment is withheld if count falls below 4000/mm3. Choice of agent: The advantages of using these drugs should be balanced against their potential toxicity. There are few studies comparing one agent with another, but evidence for efficacy is strongest for cyclophosphamide and CsA. Levamisole has a modest steroid sparing effect and is a satisfactory initial choice for patients with frequent relapses or steroid dependence. Treatment with cyclophosphamide is preferred in patients showing: (i) significant steroid toxicity, (ii) severe relapses with episodes of hypovolemia or thrombosis, and (iii) poor compliance or difficult follow up, where 12 weeks therapy might be possible to ensure than long-term compliance. Treatment with CsA or tacrolimus is recommended for

patients who continue to show steroid dependence or frequent relapses despite treatment with the above medications. Either of these agents is effective in maintaining remission in most patients with steroid sensitive nephrotic syndrome. The chief concern with their use is nephrotoxicity, but with careful assessment of renal function, minimizing the maintenance dose and utilizing renal biopsies in those receiving prolonged therapy, this risk can be minimized. Recent case series and a controlled trial support the use of MMF as a steroid sparing agent. The lack of renal, hemodynamic and metabolic toxicity with this agent makes it an attractive alternative to calcineurin inhibitors. In some patients receiving therapy with levamisole, MMF and calcineurin inhibitors, treatment with prednisolone might be tapered and discontinued after 6-12 months. Some patients who respond to therapy with levamisole, MMF and calcineurin inhibitors may relapse once these medications are discontinued. Relapses during or following therapy with these agents are treated with prednisolone as described above. Failure of alternative medication: If a patient has two or more relapses over 6 months while on treatment with any of the above agents, its replacement with an alternative medication

should be considered. A protocol summarizing the management of patients with steroid sensitive nephrotic syndrome is shown in Fig. 1. Supportive Care This forms an important aspect of managing children with nephrotic syndrome. Diet: A balanced diet, adequate in protein (1.5-2 g/ kg) and calories is recommended. Patients with persistent proteinuria should receive 2-2.5 g/kg of protein daily. Not more than 30% calories should be derived from fat and saturated fats avoided. While salt restriction is not necessary in most patients with steroid sensitive nephrotic syndrome, reduction of salt intake (1-2 g per day) is advised for those with persistent edema. Salt should not be added to salads and fruits, and snacks containing high salt avoided. Since treatment with corticosteroids stimulates appetite, parents should be advised regarding ensuring physical activity and preventing excessive weight gain. Edema: Control of edema is an integral part of supportive care. Since treatment with corticosteroids usually leads to diuresis within 5-10 days, diuretics are avoided unless edema is significant. Diuretics should also not be given to patients with diarrhea, vomiting or hypovolemia. Patients with persistent edema and weight gain of 7-10% are treated with oral frusemide (1-3 mg/kg

daily). Additional treatment with potassium sparing diuretics is not required if frusemide is used at this dose for less than one week. Patients requiring higher doses and prolonged duration of treatment with frusemide should receive potassium sparing diuretics, e.g., spironolactone (2-4 mg/kg daily). Blood pressure should be monitored frequently. A gradual reduction of edema, over one week, is preferred. Edema not responding to the above therapy should be managed in a hospital. A combination of a loop and thiazide diuretic, and/or a potassium sparing agent is occasionally necessary. For patients with refractory edema, a combination of diuretics and albumin infusion is used. Albumin (20%) is given as an infusion at a dose of 0.5-1 g/kg over 2-4 hr, followed by administration of frusemide (1-2 mg/ kg intravenously). While infusion of albumin results in increased urine output, the effect is not sustained and repeated administration might be necessary. Albumin should be administered very cautiously in patients with renal failure, pneumonia or pulmonary edema due to its potential to increase the plasma volume. Patients receiving albumin should be observed for respiratory distress, hypertension and congestive heart failure. Refractory ascites

interfering with respiration or associated with breaks in the skin may be removed by cautious paracentesis. A protocol for treatment of edema is shown in Fig. 2. Patient and parent education: Long-term outcome of children with steroid sensitive nephrotic syndrome is satisfactory, with the majority in sustained remission and with normal renal functions by adolescence. A proportion of patients, especially those (i) with early onset of nephrotic syndrome, (ii) with a frequently relapsing course, and (iii) requiring treatment with alkylating agents or CsA may continue to show relapses beyond adolescence(18). Parents should be reassured that despite a relapsing course, progression to end stage renal failure necessitating dialysis or transplantation is extremely rare. Parental motivation and involvement is essential in the long-term management of these children. They should be provided information about the disease, its expected course and risk of complications. The following are emphasized: (a) Urine examination for protein at home using dipstick, sulfosalicylic acid or boiling test. The examination should be done every morning during a relapse, during intercurrent infections or if there is even mild periorbital puffiness. The frequency of urine

examination is reduced, to once or twice a week, during remission. The importance of detecting relapse before development of significant edema is stressed. (b) Maintain a diary showing results of urine protein examination, medications received and intercurrent infections. (c) Ensure normal activity and school attendance; the child should continue to participate in all activities and sports. (d) Since infections are an important cause of morbidity, patients should receive appropriate immunization and other measures for protection.

Other medications: The use of antacids or histamine receptor antagonists (e.g., ranitidine) is not necessary, unless there are symptoms of upper gastrointestinal discomfort. Long-term calcium supplementation (calcium carbonate, 250-500 mg) is necessary if the patient receives more than 3 months treatment with prednisolone(19). Patients with steroid sensitive nephrotic syndrome do not usually require medications for hyperlipidemia, since lipids normalize following remission. Immunization: Parents should be advised regarding the need for completing the primary immunization. Administration of some vaccines, e.g., hepatitis B, measles-mumps-rubella or meningococcal vaccines may rarely precipitate a relapse.

Patients receiving prednisolone at a dose of 2 mg/ kg/day or greater, or total 20 mg/day or greater (for patients weighing >10 kg) for more than 14 days are considered immunocompromised(20). Such patients should not receive live attenuated vaccines; inactivated or killed vaccines are safe(20). Live vaccines are administered once the child is off immunosuppressive medications for at least 4 weeks. If there is a pressing need, these vaccines may be given to patients receiving alternate day prednisolone at a dose less than 0.5 mg/kg. All children with nephrotic syndrome should receive immunization against pneumococcal infections(21). It is important to note that not all pneumococcal serotypes are included in the vaccines and that antibody levels may decline during a relapse. Previously vaccinated children may, therefore, develop pneumococcal peritonitis and sepsis. The Expert Group endorses the recommendations of the Immunization Committee of the Indian Academy of Pediatrics(22). The Committee recommends 2-4 doses of the heptavalent conjugate pneumococcal vaccine for children below 2 yr of age. For previously unimmunized children between 2-5 yr old, a priming dose of the conjugate vaccine should be followed 8 weeks later, by a dose of the

23-valent polysaccharide vaccine. Children older than 5 yr require only a single dose of the polysaccharide vaccine. The vaccine should be given during remission, preferably when the child is not receiving daily prednisolone. Revaccination after 5 yr is considered for children (<10-yr-old) with active nephrotic syndrome. Patients in remission and not on immunosuppressive therapy should receive the varicella vaccine. One dose is recommended for children between 12 months and 12 yr of age, and 2 doses separated by an interval of at least 4 weeks for children 13 yr or older(23).

Kidney Biopsy Children with idiopathic nephrotic syndrome not having hematuria, hypertension or impaired renal function are treated with corticosteroids without requiring a kidney biopsy. A biopsy is usually not necessary in patients with frequent relapses or steroid dependence before starting treatment with levamisole, cyclophosphamide or MMF, but should be performed before therapy with calcineurin inhibitors. A biopsy is required to identify the underlying renal disease in certain cases (Table III). Kidney biopsies must be performed by experts with experience in the procedure. Centers that perform kidney biopsies should have facilities for

evaluation of the specimens by light and immunofluorescence microscopy

Complications Patients with steroid sensitive nephrotic syndrome are at risk for certain complications, early detection of which is necessary. Infections: Children with nephrotic syndrome are susceptible to severe infections, which need prompt treatment. Common infections include peritonitis, cellulitis and pneumonia. Viral and bacterial infections may occasionally precipitate relapses in patients previously in remission. The clinical features and management of common serious infections are summarized in Table V. Varicella may be a severe illness in patients with nephrotic syndrome receiving corticosteroids or other immunosuppressive drugs. Susceptible patients (those unimmunized or with no history of varicella) who are exposed to a case of chickenpoxshould therefore receive a single dose of varicella zoster immunoglobulin, within 96 hr of exposure to prevent or lessen the severity of the disease(17). Since, this preparation is expensive and not easily available, a single dose of intravenous immunoglobulin (400 mg/kg) may be used instead(23). However, no clinical data showing the effectiveness of the latter

strategy are available. Patients who develop varicella should receive intravenous acyclovir (1500 mg/m2/day in 3 doses) or oral acyclovir (80 mg/kg/day in 4 doses) for 7-10 days(23). The dose of prednisolone should be tapered to 0.5 mg/kg/day or lower during the infection. Patients with nephrotic syndrome who are Mantoux positive but show no evidence of tuberculosis should receive prophylaxis with INH for six months(24). Those showing evidence of active tuberculosis should receive standard therapy with anti-tubercular drugs. Thrombosis: Children with nephrotic syndrome are at risk for venous and, rarely, arterial thrombosis(16,17). Reduced intravascular volume, immobilization, indwelling vascular catheters, aggressive diuretic use and puncture of deep vessels predispose to thrombus formation. Renal vein thrombosis is suspected in a patient with oligoanuria, hematuria or flank pain, especially following an episode of dehydration. Femoral and mesenteric arterial thrombosis may occasionally occur. Deep vein thrombosis of calf veins is less common in children but may lead to pulmonary embolism. Saggital sinus and cortical venous thrombosis may follow episodes of diarrhea and present with convulsions, vomiting, altered sensorium and

neurological deficits. Ultrasonography, Doppler studies and cranial MRI are useful in confirming the diagnosis. Patients with thrombotic complications require urgent treatment. The treatment includes correction of dehydration and other complications, and use of heparin (IV) or low-molecular-weight heparin (subcutaneously) initially, followed by oral anti-coagulants on the long-term(16,17). There is no role for prophylactic treatment with anticoagulants in patients with hypoalbuminemia and edema. Hypertension: This may be detected at the onset of nephrotic syndrome or later due to steroid toxicity. Therapy is initiated with ACE inhibitors, calcium channel blockers or β adrenergic antagonists, keeping the blood pressure at less than the 90th percentile(25). Hypovolemic shock: This complication can occur due to unsupervised use of diuretics especially if accompanied by septicemia, diarrhea or vomiting. The diagnosis is suggested by moderate to severe abdominal pain, hypotension, tachycardia, cold extremities and poor capillary refill; hematocrit and blood levels of urea and uric acid are elevated. Management consists of rapid infusion of normal saline at a dose of 15-20 mL/kg over 20-30 minutes; this is repeated if clinical features of hypovolemia persist.

Infusion of 5% albumin (10-15 mL/kg) or 20% albumin (0.5-1 g/kg) may be used in subjects who do not respond despite two boluses of saline. Corticosteroid side effects: Prolonged steroid therapy may be associated with significant side effects. Patients (if they can understand) and the parents should be explained about the side effects of the medications, including increased appetite, impaired growth, behavioral changes, risk of infections, salt and water retention, hypertension and bone demineralization. All patients should be monitored for cushingoid features and blood pressure; six-monthly record of height and weight, and yearly evaluation for cataract should be done. Patients on prolonged (>3 months) treatment with steroids should receive daily supplements of oral calcium (250-500 mg daily) and vitamin D (125-250 IU)(19). Steroids during stress: Patients who have received high-dose steroids for more than 2 weeks in the past year are at risk of suppression of the hypothalamopituitary-adrenal axis. These children require supplementation of steroids during surgery, anesthesia or serious infections(26). Corticosteroids are supplemented, as parenteral hydrocortisone at a dose of 2-4

mg/kg/day, followed by oral prednisolone at 0.3-1 mg/kg/day. This is given for the duration of stress and then tapered rapidly.

CONCLUSIONS Recommendations on management of nephrotic syndrome, proposed in 2001, have been reexamined and revised based on systematic reviews, published studies and expert opinion of the members of the Indian Pediatric Nephrology Group. These guidelines are intended to familiarize physicians with principles of management of children with steroid sensitive nephrotic syndrome. Therapy needs to be individualized for each patient and optimal care will be achieved by combined inputs of the primary pediatrician and pediatric nephrologist. Further revisions of these guidelines, indicating best current practice, shall be periodically necessary.

Management of urinary tract infection in children

Urinary tract infection (UTI) is a common bacterial infection in infants and children. The risk of having a UTI before the age of14 years is approximately 1-3% in boys and 3-10% in girls. The diagnosis of UTI is often missed in infants and young children, as urinary symptoms are minimal and often non-specific. Rapid

evaluation and treatment of UTI is important toprevent renal parenchymal damage and renal scarring that can cause hypertension and progressive renal damage. Pediatricians should be aware of the clinical features, diagnosis, management and evaluation of children with UTI. Even a single confirmed UTI should be taken seriously, especially in young children, due to the potential for renal parenchymal damage**.**

Definitions

Infection of the urinary tract is identified by growth of a significant number of organisms of a single species in the urine, in the presence of symptoms. The diagnosis of UTI should be made only in patients with a positive urine culture, since this has implications for detailed evaluation and follow up. Recurrent UTI, defined as the recurrence of symptoms with significant bacteriuria in patients who have recovered clinically following treatment, is common in girls. Recurrent UTI add to parental anxiety, medical costs and the risk of renal parenchymal damage in young infants.

Clinical Features

UTI is an important cause for fever without a focus, especially in children less than 2 years old. In neonates, UTI is usually a part of septicemia and presents with fever, vomiting, lethargy, jaundice and seizures. Infants and young children present with recurrent fever, diarrhea, vomiting, abdominal pain and poor weight gain. Older children show fever, dysuria, urgency, frequency and abdominal or flank pain. Adolescents may have symptoms restricted to the lower tract, and fever may not be present.

The distinction between upper and lower UTI is difficult and not necessary. In view of risks of renal parenchymal damage associated with delayed treatment, UTI in children is considered to involve the upper tract and should be treated promptly. Patients with features of systemic toxicity are considered as having complicated UTI, while those without these features are referred to as simple UTI.

Diagnosis

The diagnosis of UTI is based on positive culture of a properly collected specimen of urine. While urinalysis enables a provisional diagnosis of UTI, a specimen must be obtained for culture prior to

therapy with antibiotics. Significant pyuria is defined as >10 leukocytes per mm3 in a fresh uncentrifuged sample, or >5 leukocytes per high power field in a centrifuged sample. Leukocyturia might occur in conditions such as fever, glomerulonephritis, renal stones or presence of foreign body in the urinary tract. The detection of leukocyturia in absence of significant bacteriuria is not sufficient to diagnose a UTI. Rapid dipstick based tests, which detect leukocyte esterase and nitrite, are useful in screening for UTI. A combination of these tests has moderate sensitivity and specificity for detecting UTI, and is diagnostically as useful as microscopy.

Collection of specimen for culture

A clean-catch midstream specimen is used to minimize contamination by periurethral flora. Contamination can be minimized by washing the genitalia with soap and water. Antiseptic washes and forced retraction of the prepuce are not advised. Inneonates and infants, urine sample is obtained by either suprapubic aspiration or transurethral bladder catheterization. Both techniques are safe and easy to perform.

The urine specimen should be promptly plated within one hour of collection. If delay is anticipated, the sample can be storedin a refrigerator at 4ºC for up to 12-24 hours. Cultures of specimens collected from urine bags have high false positive rates, and are not recommended.

A urine culture should be repeated in case contamination is suspected, e.g. mixed growth of two or more pathogens, or growth of organisms that normally constitute the periurethral flora (lacto-bacilli in healthy girls; enterococci in infants and toddlers). The culture should also be repeated in situations where UTI is strongly suspected but colony counts are equivocal. The number of bacteria required for defining UTI depends on the method of urine collection.

Initial Evaluation

The patient is examined for the degree of toxicity, dehydration and ability to retain oral intake. The blood pressure should berecorded and history regarding bowel and bladder habits elicited. The child is examined for features that suggest an underlying functional or urological abnormality.Complete blood counts, serum creatinine and a

blood culture should be done in infants and children with complicated UTI.I depends on the method of urine collection.

Immediate Treatment

The patient's age, features suggesting toxicity and dehydration, ability to retain oral intake and the likelihood of compliance with medication(s) help in deciding the need for hospitalization. Therapy should be prompt to reduce the morbidity of infection, minimize renal damage and subsequent complications.

Children less than 3 months of age and those with complicated UTI should be hospitalized and treated with parenteral antibiotics. The choice of antibiotic should be guided by local sensitivity patterns. A third generation cephalosporin is preferred. Therapy with a single daily dose of an aminoglycoside may be used in children with normal renal function. Once the result of antimicrobial sensitivity is available, the treatment may be modified. Intravenous therapy is given for the first 2-3 days followed by oral antibiotics once the clinical condition improves.

Children with simple UTI and those above 3 months of age are treated with oral antibiotics. With adequate therapy, there is resolution of fever and reduction of symptoms by 48-72 hours. Failure to respond may be due to presence of resistant pathogens, complicating factors or noncompliance; these patients require re-evaluation.

Duration of Treatment

The duration of therapy is 10-14 days for infants and children with complicated UTI, and 7-10 days for uncomplicated UTI.. Adolescents with cystitis may be treated with shorter duration of antibiotics, lasting 3 days. Following the treatment of the UTI, prophylactic antibiotic therapy is initiated in children below 1 year of age, until appropriate imaging of the urinary tract is completed.

Supportive Therapy

During an episode of UTI, it is important to maintain adequate hydration. A sick, febrile child with inadequate oral intake or dehydration may require parenteral fluids. Routine alkalization of the urine is not necessary. Paracetamol is used to relieve fever; therapy with non steroidal anti- inflammatory agents should be avoided. A

repeat urine culture is not necessary, unless there is persistence of fever and toxicity despite 72 hours of adequate antibiotic therapy.

Evaluation after the first UTI

The aim of investigations is to identify patients at high risk of renal damage, chiefly those below one year of age, and those with VUR or urinary tract obstruction. Evaluation includes ultrasonography, dimercaptosuccinic acid (DMSA) renal scan and micturating cystourethrography (MCU) performed judiciously. An ultrasonogram provides information on kidney size, number and location, presence of hydronephrosis, urinary bladder anomalies and post-void residual urine. DMSA scintigraphy is a sensitive technique for detecting renal parenchymal infection and cortical scarring. MCU detects VUR and provides anatomical details regarding the bladder and the urethra. Follow-up studies in patients with VUR can be performed using direct radionuclide cystography. There is limited evidence that intensive imaging and subsequent management alters the long-term outcome of children with reflux nephropathy diagnosed following a UTI. With availability of antenatal screening, most important anomalies have

already been detected and managed after birth. Therefore, there is considerable debate regarding the need and intensity of radiologic evaluation in children with UTI [1,9].

The Expert Group reviewed the current literature, keeping in view that in our country the diagnosis of UTI is often missed or delayed, and there are limitations of infrastructure and scarcity of resources for routine antenatal screening. Based on the above, it concluded that all children with the first UTI should undergo radiological evaluation. The detection of significant scarring, high grade VUR or obstructive uropathy might enable interventions that prevent progressive kidney damage in the long-term. Since infants and young children are at the highest risk for renal scarring, it is necessary that this group undergo focused evaluation.

It is recommended that all infants with UTI be screened by ultrasonography, followed by MCU and DMSA scintigraphy. Since older patients (1-5 year old) with significant reflux and scars or urinary tract anomalies are likely to show abnormalities on ultrasonography or scintigraphy, a MCU is advised in patients having

abnormalities on either of the above investigations. Children older than 5 years are screened by ultrasonography and further evaluated only if this is abnormal. It is emphasized that patients with recurrent UTI at any age should undergo detailed imaging with ultrasonography, MCU and DMSA scintigraphy. Ultrasonography should be done soon after the diagnosis of UTI. The MCU is recommended 2-3 weeks later, while the DMSA scan is carried out 2-3 months after treatment. An early DMSA scan, performed soon after a UTI, is not recommended in routine practice. Patients showing hydronephrosis in the absence of VUR should be evaluated by diureticrenography using 99mTc-labeled diethylenetriamine-pentaacetic acid (DTPA) or mercaptoacetylglycine (MAG-3). Thesetechniques provide quantitative assessment of renal function and drainage of the dilated collecting system.

Prevention of Recurrent UTI

General

Adequate fluid intake and frequent voiding is advised; constipation should be avoided. In children with VUR who are toilet trained,

regular and volitional low pressure voiding with complete bladder emptying is encouraged. Double voiding ensures emptying of the bladder of post void residual urine. Circumcision reduces the risk of recurrent UTI in infant boys, and might therefore have benefits in patients with high grade reflux .

Bowel bladder dysfunction

Children presenting with recurrent UTI or persistent VUR often have an associated voiding disorder, which are characterized by abnormal patterns of micturition in presence of intact neuronal pathways without congenital or anatomical abnormalities. Abnormal bladder pressure and urinary stasis predispose these children to recurrent UTI. There may be an abnormality either during the filling phase as in an overactive bladder, or the evacuation phase as in dysfunctional voiding.. Since constipation is often associated with a functional voiding disorder, the condition is referred to as Bowel bladder dysfunction(BBD). Children with recurrent UTI are likely to have dysfunctional voiding. Evaluation for a voiding disorder includes a record of frequency and voided volume and fluid intake for two to

three days. It is useful to watch the urinary stream, and for post void dribbling in boys. Urodynamic studies are done in selected cases. The management of voiding disorders should be carried out in collaboration with an expert. This includes the exclusion of neurological causes, institution of structured voiding patterns and management of constipation. In patients with an overactive bladder, therapy with anticholinergic medications (e.g.,oxybutinin) is effective. Patients with bowel bladder dysfunction and large post void residues, benefit from timely voiding, bladder retraining, and clean intermittent catheterization.

Antibiotic Prophylaxis

Long-term, low dose, antibacterial prophylaxis is used to prevent recurrent, febrile UTI. The antibiotic used should be effective, non-toxic with few side effects and should Indications and Duration of Prophylaxis

The indications and duration of prophylaxis depend on patient age and presence or absence of VUR. Antibiotic prophylaxis is recommended for patients with UTI below 1-yr of age while awaiting

imaging studies, high grade VUR, frequent febrile UTI (3 or more episodes in a year) even if the urinary tract is normal. Antibiotic prophylaxis is not advised in patients with urinary tract obstruction (e.g. posterior urethral valves), urolithiasis and neurogenic bladder, and inpatients on clean intermittent catheterization.

Breakthrough UTI on Prophylactic Antibiotics

Breakthrough UTI results either from poor compliance or associated voiding dysfunction. The UTI should be treated with appropriate antibiotics. A change of the medication being used for prophylaxis is usually not necessary. There is no role for cyclic therapy, where the antibiotic used for prophylaxis is changed every 6-8 weeks.

Asymptomatic Bacteriuria

Asymptomatic bacteriuria is the presence of significant bacteriuria in the absence of symptoms of UTI. Its frequency is 1-2% in girls and 0.2% in boys. Asymptomatic bacteriuria is a benign condition, which does not cause renal injury and requires no treatment. The organism isolated in most instances is E. coli, which is of low virulence. Eradication of these organisms isoften followed by symptomatic

infection with more virulent strains. Therapy of asymptomatic bacteriuria or antibiotic prophylaxis is not required . The presence of asymptomatic bacteriuria in a patient previously treated for UTI should not be considered as recurrent UTI

.

LIST OF STUDENTS ENROLLED IN VALUE ADDED COURSE ON OFFICE PRACTICE IN PEDIATRIC NEPHROLOGY

S.No	Register No	Students List	Signature
2019	U16MB271	AVIDI VENKATA SAISUSHMA	
2019	U16MB272	AVIRAL PATPATIA	
2019	U16MB273	BALACHANDRAN .A	
2019	U16MB274	BALAJI .S	
2019	U16MB275	BHASKARAN .K.C	
2019	U16MB276	BHAVANI . K.M	
2019	U16MB277	BLESSY AMALA RISHA .J	
2019	U16MB278	CAREENA DANIEL	
2019	U16MB279	CHANDRA PRAKASH.M	
2019	U16MB280	CHINJU S.R	
2019	U16MB281	DASARI VENKATA SAI MOUNISH	
2019	U16MB282	DEBARPITA NATH	
2019	U16MB283	DEEBAK .I	
2019	U16MB284	DEEKSHITH D.R	
2019	U16MB285	DEEPIKAA D.V	
2019	U16MB286	DELFI MARY .E	
2019	U16MB287	DEVIKA.U.M	
2019	U16MB288	DHAKSHANA .M	
2019	U16MB289	EDA SAI VENKATA TEJA	
2019	U16MB290	GAURAV KUMAR	

ASSISTANT PROFESSOR
DEPARTMENT OF PAEDIATRICS
SRI LAKSHMI NARAYANA INSTITUTE OF
MEDICAL SCIENCES

PAEDIATRICS HEAD
DEPT. OF PAEDIATRICS
SRI LAKSHMI NARAYANA INSTITUTE OF
MEDICAL SCIENCES
OSUDU, PUDUCHERRY

Resource Person

Dr Karuppiah Pandi

Course Co Ordinator

Dr V. Raghavendran

SRI LAKSHMI NARAYANA INSTITUE OF HIGHER EDUCATON AND RESEARCH

Annexure - III

OFFICE PRACTICE IN PEDIATRIC NEPHROLOGY

MULTIPLE CHOICE QUESTIONS

Course Code: PECO11

Name: CHANDRAPRAKASH. M

Roll No: VKMB279

I. ANSWER ALL THE QUESTIONS

1. The Indian guidelines for management of steroid sensitive nephrotic syndrome was updated in

   a. 2001

   b. 2004

   c. 2008

   d. 2012

2. How many percentage of children with nephrotic syndrome respond to steroids?

   a. 100%

   b. 90%

   c. 80%

   d. 70%

3. What is the dose of prednisolone for first episode of nephrotic syndrome?

   a. 1 mg/kg till remission then on alternate days for total 3 months

   b. 2mg/kg for 6 weeks followed by alternate day 1.5 mg/kg for another 6 weeks

   c. 2mg/kg for 4 weeks followed by alternate day 1.5 mg/kg for another 4 weeks

   d. None of the above

4. Which of the following are not complications of long term prednisolone therapy?

   a. Hypertension

   b. Leucopenia

   c. Obesity

-1-

d. Avascular necrosis of femoral head

5. Cyclophosphamide therapy should be discontinued in which of the following conditions?

a. Deranged LFT

b. Deranged RFT

c. Both A & B are Correct

d. WBC count less than 4000/cu.mm

6. Which of the vaccines is contraindicated when a child is on daily prednisolone therapy?

a. Killed influenza vaccine

b. DPT vaccine

c. OPV

d. Hepatitis B vaccine

7. Which of the following does not required treatment with antibiotic?

a. An asymptomatic 2 yr old male with urine culture showing growth of E.coli>10^5 CFU/ml

b. A symptomatic 2 yr old male child with urine routine showing >10/hpf pus cells and positive leucocyte esterase and positive nitrite.

c. Both require antibiotic

d. None require antibiotic

8. Which of the following investigations is not routinely done in an infant with UTI?

a. USG KUB

b. MCU

c. DMSA

d. None of the above

9. Antibiotic prophylaxis is not indicated in which of the following?

a. Grade II VUR

b. Grade V VUR

c. Recurrent febrile UTI

d. Infant with UTI awaiting further investigations

10. What is the gold standard for diagnosis of UTI?

a. Urine routine

b. Urine culture

c. USG KUB

d. DMSA

11. Which of the following is not a risk factor for UTI?

a. Male child more than 1 year old

b. Presence of high grade VUR

c. Constipation

d. Uncircumcised male child

12. What is the duration of antibiotic therapy is a child with complicated UTI?

a. 5 days

b. 7 days

c. 10 days

d. 14 days

8/12

Signature of Student:

Signature of Assessor:

Date: 21.11.2019

-3-

SRI LAKSHMI NARAYANA INSTITUE OF HIGHER EDUCATON AND RESEARCH

Annexure - III

OFFICE PRACTICE IN PEDIATRIC NEPHROLOGY

MULTIPLE CHOICE QUESTIONS

Course Code: PECO11

Name: Chinju S.R

Roll No: U16MB280

I. ANSWER ALL THE QUESTIONS

1. The Indian guidelines for management of steroid sensitive nephrotic syndrome was updated in

   a. 2001

   b. 2004

   c. 2008 (1)

   d. 2012

2. How many percentage of children with nephrotic syndrome respond to steroids?

   a. 100%

   b. 90%

   c. 80% (1)

   d. 70%

3. What is the dose of prednisolone for first episode of nephrotic syndrome?

   a. 1 mg/kg till remission then on alternate days for total 3 months

   b. 2mg/kg for 6 weeks followed by alternate day 1.5 mg/kg for another 6 weeks

   c. 2mg/kg for 4 weeks followed by alternate day 1.5 mg/kg for another 4 weeks

   d. None of the above (1)

4. Which of the following are not complications of long term prednisolone therapy?

   a. Hypertension

   b. Leucopenia (1)

   c. Obesity

d. Avascular necrosis of femoral head

5. Cyclophosphamide therapy should be discontinued in which of the following conditions?

a. Deranged LFT

b. Deranged RFT

c. Both A & B are Correct

d. WBC count less than 4000/cu.mm

6. Which of the vaccines is contraindicated when a child is on daily prednisolone therapy?

a. Killed influenza vaccine

b. DPT vaccine

c. OPV

d. Hepatitis B vaccine

7. Which of the following does not required treatment with antibiotic?

a. An asymptomatic 2 yr old male with urine culture showing growth of E.coli>10^5 CFU/ml

b. A symptomatic 2 yr old male child with urine routine showing >10/hpf pus cells and positive leucocyte esterase and positive nitrite.

c. Both require antibiotic

d. None require antibiotic

8. Which of the following investigations is not routinely done in an infant with UTI?

a. USG KUB

b. MCU

c. DMSA

d. None of the above

9. Antibiotic prophylaxis is not indicated in which of the following?

a. Grade II VUR

b. Grade V VUR

c. Recurrent febrile UTI

d. Infant with UTI awaiting further investigations

10. What is the gold standard for diagnosis of UTI?

a. Urine routine

b. Urine culture

c. USG KUB

d. DMSA

11. Which of the following is not a risk factor for UTI?

a. Male child more than 1 year old

b. Presence of high grade VUR

c. Constipation

d. Uncircumcised male child

12. What is the duration of antibiotic therapy is a child with complicated UTI?

a. 5 days

b. 7 days

c. 10 days

d. 14 days

Signature of Student:

Signature of Assessor:

11/12

Date: 21.11.19

Sri Lakshmi Narayana Institute of Medical Sciences

Affiliated to Bharath Institute of Higher Education & Research

(Deemed to be University under section 3 of the UGC Act 1956)

CERTIFICATE OF MERIT

This is to certify that _ABHIJITH.K_has actively participated in the Value Added Course on *Office Practice In Pediatric Nephrology* held during November – December 2019 Organized by Sri Lakshmi Narayana Institute of Medical Sciences, Pondicherry- 605 502, India.

Dr. Karuppiah Pandi

RESOURCE PERSON

Dr. V. Raghavendran

COORDINATOR

Annexure- V

Student Feedback Form

Course Name: Office Practice in Pediatric Nephrology

Subject Code: PECO11

Name of Student: Abhijith K Roll No.: U17MB254

We are constantly looking to improve our classes and deliver the best training to you. Your evaluations, comments and suggestions will help us to improve our performance

Feedback Form
FIVE POINT LIKERT SCALE

1. All the Sessions covered all the competencies like knowledge, analysis, training, practical Demonstration, Performance skill on your own and all other aspects related to overall global skills.

1, Strongly Disagree, 2. Disagree, 3. Neither Agree nor Disagree, ~~4~~. Agree, 5. Strongly Agree

2. The content, method of delivery and ambience in the lecture session will help you to develop an overall performer?

1, Strongly Disagree, 2. Disagree, 3. Neither Agree nor Disagree, 4. Agree, ~~5~~. Strongly Agree

3. Procedural skill by Tutor demonstration was done with clarity and made you to understand thoroughly.

1, Strongly Disagree, 2. Disagree, 3. Neither Agree nor Disagree, ~~4~~. Agree, 5. Strongly Agree

4. This Methodology of Teaching Learning method made you to understand all aspects of Technical skill thoroughly.

1, Strongly Disagree, 2. Disagree, 3. Neither Agree nor Disagree, ~~4~~. Agree, 5. Strongly Agree

5. You really feel that this method is good and there is increase in the self-confidence?

1, Strongly Disagree, 2. Disagree, 3. Neither Agree nor Disagree, 4. Agree, ~~5~~. Strongly Agree

6. This method of Teaching Learning method is comprehensive in developing all competencies.

1, Strongly Disagree, 2. Disagree, 3. Neither Agree nor Disagree, 4. Agree, 5. Strongly Agree

7. By DOPS Assessment method your knowledge, performance general skills and overall ability were completely assessed?

1, Strongly Disagree, 2. Disagree, 3. Neither Agree nor Disagree, 4. Agree, 5. Strongly Agree

8. This method of assessment is Transparent?

1, Strongly Disagree, 2. Disagree, 3. Neither Agree nor Disagree, 4. Agree, 5. Strongly Agree

9. You were given chance to analyze your mistakes and rectify in future in the form of feedback from Examinee?

1, Strongly Disagree, 2. Disagree, 3. Neither Agree nor Disagree, 4. Agree, 5. Strongly Agree

10. Though it is elaborate and time consuming we can apply in future?

1, Strongly Disagree, 2. Disagree, 3. Neither Agree nor Disagree, 4. Agree, 5. Strongly Agree

11. It would be liked and supported by you to have such comprehensive competency testing assessment methods in future?

1, Strongly Disagree, 2. Disagree, 3. Neither Agree nor Disagree, 4. Agree, 5. Strongly Agree

12. It would be liked, supported and strongly recommended by you if this type of TL Method and assessment method is implemented in future.

1, Strongly Disagree, 2. Disagree, 3. Neither Agree nor Disagree, 4. Agree, 5. Strongly Agree

Signature of the CRRI:

Date:

Date: 06.12.2019

From

Dr. V. Raghavendran
Professor and Head,
Department of Pediatrics,
Sri Lakshmi Narayana Institute of Medical Sciences
Bharath Institute of Higher Education and Research,
Chennai.

Through Proper Channel

To

The Dean,
Sri Lakshmi Narayana Institute of Medical Sciences
Bharath Institute of Higher Education and Research,
Chennai.

Sub: Completion of value-added course: Office Practice In Pediatric Nephrology

Dear Sir,

With reference to the subject mentioned above, the department has conducted the value-added course titled: Office Practice In Pediatric Nephrology from November to December 2019 for 20 final year MBBS students. We solicit your kind action to send certificates for the participants, that is attached with this letter. Also, I am attaching the photographs captured during the conduct of the course.

Kind Regards,

Dr. V. Raghavendran

PAEDIATRICS HEAD
DEPT. OF PAEDIATRICS
SRI LAKSHMI NARAYANA INSTITUTE OF
MEDICAL SCIENCES
OSUDU, PUDUCHERRY

Encl: Certificates

Photograph