

Report of activities of ESPN Working Group

Name of Working Group	Transplantation
Year	2020 - 2022
WG Coordinator	Burkhard Tönshoff, Lars Pape
WG Board Members	Ryszard Grenda, Anette Melk, Stephen Marks, Jun Oh, Tomáš Seeman, Oguz Soylemezoglu, Luca dello Strologo, Rezan Topaloglu, Lutz Weber
Number of WG Members	48

Research Activities (2013 – 2022)

A. Completed Studies (Title, coordinator, short content (max 1-2 sentences)):		
1. Longitudinal growth on an everolimus- versus an MMF-based steroid-free immunosuppressive regimen in paediatric renal transplant recipients	Billing H et al.	Transpl Int 2013
2. Efficacy and safety of an everolimus- vs. a mycophenolate mofetil-based regimen in pediatric renal transplant recipients	Brunkhorst LC et al.	PLoS One 2015
3. Cytomegalovirus infection in pediatric renal transplantation and the impact of chemoprophylaxis with (val-) ganciclovir	Höcker B et al.	Transplantation 2016
4. Impact of everolimus and low-dose cyclosporin on cytomegalovirus replication and disease in pediatric renal transplantation	Höcker B et al.	Am J Transplant 2016
5. Dyslipidemia after pediatric renal transplantation - the impact of immunosuppressive regimens	Habbig S et al.	Pediatr Transplant 2017
6. Urinary proteomics to diagnose chronic antibody-mediated rejection in pediatric kidney transplantation	Kanzelmeyer NK et al.	Transpl Int 2018
7. Epidemiology of and risk factors for BK polyomavirus replication and nephropathy in pediatric renal transplant recipients: an international CERTAIN Registry study	Höcker B et al.	Transplantation 2018
8. JC polyomavirus replication and associated disease in pediatric renal transplantation: an international CERTAIN Registry study	Höcker B et al.	Pediatr Nephrol 2018
9. Survey on management of transition and transfer from pediatric to adult-based care in pediatric kidney transplant recipients in Europe	Kreutzer M et al.	Transplant Direct 2018

10. Outcome of renal transplantation in small infants: a match-controlled analysis.	Weitz M et al.	Pediatr Nephrol 2018
11. Vaccination titres pre- and post-transplant in paediatric renal transplant recipients and the impact of immunosuppressive therapy	Höcker B et al.	Pediatr Nephrol 2018
12. Incomplete vaccination coverage in European children with end-stage kidney disease prior to renal transplantation	Höcker B et al.	Pediatr Nephrol 2018
13. Epidemiology of and risk factors for BK polyomavirus replication and nephropathy in paediatric renal transplant recipients: an international CERTAIN Registry study	Höcker B et al.	<i>Transplantation</i> 2019
14. Sex and age as determinants for high blood pressure in pediatric renal transplant recipients: a longitudinal analysis of the CERTAIN Registry	Melk A et al.	Pediatr Nephrol 2020
15. Pilot study on the use of cinacalcet after pediatric renal transplantation: an international CERTAIN Registry analysis	Bernardor J et al.	Pediatr Nephrol 2020

B.Ongoing Studies (Title, coordinator, short content (max 1-2 sentences)):
<p>1. Prevention of human papillomavirus (HPV) infection in paediatric kidney and liver transplant recipients and in paediatric patients with advanced chronic kidney disease: a prospective, observational multi-centre vaccine surveillance study (HPVaxResponse Study) Britta Höcker, Tim Waterboer, Burkhard Tönshoff et al. Britta.Hoecker@med.uni-heidelberg.de</p> <p>2. Antibody-mediated rejection in European paediatric renal transplant recipients: incidence, risk factors and outcome. Alexander Fichtner, Caner Süsal, Jan Becker, Britta Höcker, Lars Pape, Anette Melk, Stephen Marks, Luca dello Strologo, Kai Krupka, Burkhard Tönshoff et al. Alexander.Fichtner@med.uni-heidelberg.de</p> <p>3. Long-term outcome after pediatric combined liver and kidney transplantation: Florian Brinkert, Jun Oh, Alexander Fichtner et al. f.brinkert@uke.de</p> <p>4. Prevalence and influencing factors of hyperuricemia in pediatric renal transplant recipients – a retrospective CERTAIN analysis. Rasmus Ehren, Sandra Habbig, Lutz T. Weber et al. (database closed) rasmus.ehren@uk-koeln.de</p> <p>5. Outcome after paediatric kidney transplantation from very small donors: a retrospective observational matched cohort study. Raphael Schild, Jun Oh, Lars Pape, Burkhard Tönshoff et al. (database closed) r.schild@uke.de</p> <p>6. Hyperparathyroidism after paediatric RTx: risk factors, management strategies and association with longitudinal growth. Agnieszka Prytula et al. (database closed) agnieszka.prytula@uzgent.be</p> <p>7. Recurrence of nephrotic syndrome after pediatric kidney transplantation in Europe: risk factors, treatment and outcome. Antonia Bouts et al. a.h.bouts@amc.uva.nl</p> <p>8. Arterial hypertension and cardiovascular comorbidity after renal transplantation – triggers, treatment and sequelae. Anette Melk, Elke Wühl et al. melk.anette@mh-hannover.de, elke.wuehl@med.uni-heidelberg.de</p> <p>9. Prospective longitudinal multi-center study evaluating modifiable barriers to accessing transplantation and transplant outcomes in children in Europe, short title: “European Paediatric</p>

Access to Kidney Transplantation (EuPAKT)”. Stephen D Marks, Ji Soo Kim, Kai Krupka and Burkhard Tönshoff stephen.marks@gosh.nhs.uk

10. Comparing modern molecular methods of assessing HLA immunogenicity to serology mismatching in paediatric kidney transplantation – a CERTAIN analysis. Jon Jin Kim, Alexander Fichtner, Caner Süsal et al. JonJin.Kim@nuh.nhs.uk

11. Validation of a prediction system for risk of allograft loss in children receiving kidney transplants (iBOX). Julien Hogan and Members of the CERTAIN Research Network. Julien.hogan2@aphp.fr

C.Planned Studies (Title, coordinator, short content (max 1-2 sentences)):

1. The gut microbiome as a key to personalized therapy in pediatric kidney transplantation – rationale for a multicenter study and study logistics– Maral Baghai, Heidelberg
2. Definition and validation of the impact of tacrolimus variability and concentration/dose ratio on allograft rejection, function and tacrolimus-related toxicity in paediatric kidney transplant recipients– Maral Baghai, Heidelberg

Guideline Projects (Title, coordinator)

1. Clinical practice recommendations for recurrence of focal and segmental glomerulosclerosis/steroid-resistant nephrotic syndrome (Weber, dello Strologo, Tönshoff, Pape)
2. aHUS recurrence posttransplant (Oh, Topaloğlu)
3. Antithrombotic prophylaxis posttransplant (Buder, Weitz)

WG Meetings (Date – Place)

1. CERTAIN/ESPN workshop, December 4 - 5, 2020 (virtual)
2. CERTAIN/ESPN workshop, May 8, 2021 (virtual)
3. ESPN/CERTAIN Working Group “Transplantation”, Amsterdam, September 9, 2021 (hybrid)
4. CERTAIN/ESPN workshop, December 3 - 4, 2021 (hybrid)
5. CERTAIN/ESPN workshop, May 7, 2022 (virtual)
6. ESPN/CERTAIN Working Group “Transplantation”, Ljubljana, June 23, 2022 (hybrid)
7. CERTAIN/ESPN workshop, December 2 - 3, 2022 (hybrid)

Publications

A.Published papers (bibliography 2020 - 2021):

1. Sugianto R, Schmidt B, Memaran N, Duzova A, Seeman T, König S, Dello Strologo L, Murer L, Özçakar Z, Bald M, Shenoy M, Buescher A, Hoyer PF, Pohl M, Billing H, Oh J, Staude H, Pohl M, Genc G, Klaus G, Alparslan C, Grenda R, Rubik J, Krupka K, Tönshoff B, Wühl E, Melk A. Sex and age as determinants for high blood pressure in pediatric renal transplant recipients: A longitudinal analysis of the CERTAIN Registry. *Pediatr Nephrol* (2020) 35: 415–426.
2. Bernardor J, Schmitt CP, Oh J, Sellier-Leclerc AL, Büscher A, Dello Strologo L, Genc G, John U, Weitz M, Zirngibl M, Krupka K, Tönshoff B, Bacchetta J. The use of cinacalcet after pediatric

renal transplantation: an international CERTAIN Registry analysis. *Pediatr Nephrol* 2020; 35:1707-1718.

3. Buder K, Zirngibl M, Bapistella S, Nadalin S, Tönshoff B, Weitz M; Members of the “Transplantation Working Group” of the European Society for Paediatric Nephrology (ESPN). Current practice of antithrombotic prophylaxis in pediatric kidney transplantation-Results of an international survey on behalf of the European Society for Paediatric Nephrology. *Pediatr Transplant*. 2020 Nov;24(7):e13799.
4. Weber LT, Tönshoff B, Grenda R, Bouts A, Topaloglu R, Gülhan B, Printza N, Awan A, Battelino N, Ehren R, Hoyer PF, Novljan G, Marks SD, Oh J, Prytula A, Seeman T, Sweeney C, Dello Strologo L, Pape L. Clinical practice recommendations for recurrence of focal and segmental glomerulosclerosis/steroid-resistant nephrotic syndrome. *Pediatr Transplant*. 2021 May;25(3):e13955.

B.Submitted papers:

1. Kim JK, Lorenzo A, Tönshoff B, Chua M, Raveendran L, Krupka K, Teoh CW, Ming J, Topaloglu R, Dello Strologo L, Farhat W, Koyle M. Hospitalization following pediatric kidney transplantation: an international comparison amongst a Canadian pediatric transplant center, North American Pediatric Renal Trials and Collaborative Studies (NAPRTCS), and Cooperative European Paediatric Renal Transplant Initiative (CERTAIN) registry data. Submitted to *Pediatr Transplant*
2. Patry C et al. Emulation of the control group of a randomized controlled trial in pediatric kidney transplantation with Real World Data from the Cooperative European Paediatric Renal Transplant Initiative registry. Submitted
3. Patry C et al. Timing of reconstruction of the lower urinary tract in pediatric kidney transplant recipients: CERTAIN multicenter analysis of current practice. Submitted

Presentations at conferences during the year 2020 - 2021

A.Oral and Poster presentations (published abstracts):

1. Buder K, Nadalin S, Tönshoff B, Weitz M: Antithrombotische Prophylaxe bei pädiatrischer Nierentransplantation – Vorläufige Ergebnisse einer ESPN-basierten Online-Umfrage. *Nieren- und Hochdruckkrankheiten*, 49, 88–89, 2020
2. Fichtner A, Gauché L, Höcker B, Süsal C, Waldherr R, Schmidt J, Pape L, Zirngibl M, Weber LT, Oh J, König S, Büscher A, Heindl-Rusai K, Weitz M, Murer L, Dello Strologo L, Tönshoff B: Prävalenz, Risikofaktoren und Langzeit-Outcome der antikörpervermittelten Rejektion (ABMR) nach Nierentransplantation im Kindes- und Jugendalter. *Nieren- und Hochdruckkrankheiten*, 49, 123-124, 2020
3. Ehren R, Habbig S, Krupka K, Bald M, Staude H, Dello Strologo L, Tönshoff B, Weber LT: Prevalence and risk factors of hyperuricemia in pediatric renal transplant recipients – a retrospective CERTAIN analysis – HighUric-Study *Nieren- und Hochdruckkrankheiten*, 49, 136-137, 2020
4. Prytula A, Shroff R, Bacchetta J, Krupka K, Deschepper E, Haffner D, Tönshoff B: Hypocalcaemia and hyperphosphataemia are associated with allograft dysfunction in paediatric kidney transplant recipients. *Pediatr Nephrol* 36:3290, 2021
5. Höcker B, Schmidt J, Süsal C, Murer L, Zirngibl M, König S, Dello Strologo L, Weber LT, Schild R, Awan A, Gauché L, Saygili S, Krupka K, Bruckner T, Schnitzler P, Hirsch HH, Fichtner A, Tönshoff B: Risk of cellular and/or antibody mediated transplant rejection in paediatric kidney transplant

recipients with BK polyomavirus replication – a multicentre CERTAIN analysis. *Pediatr Nephrol* 36: 3456, 2021

6. Patry C, Höcker B, Fichtner A, Bald M, Weitz M, Weber L, Hansen M, Oh J, Dello Strologo L, Buder K, Grenda R, Peruzzi L, Murer L, Pape L, Müller D, Tönshoff B, Nyarangi-Dix J: Operative Rekonstruktion des unteren Harntraktes vor oder nach Nierentransplantation – eine multizentrische Analyse der Langzeit-Ergebnisse aus dem CERTAIN Registry. *Nieren- und Hochdruckkrankheiten*, 50: 363-364, 2021