

## Marina Vivarelli

### Personal data

**Date of birth:** December 18, 1972

**Place of birth:** Florence, Italy

**Citizenship:** Italian/USA

**Address:** UO Nefrologia e Dialisi, Ospedale Pediatrico Bambino Gesù  
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### **Qualification:** MD

**Permanent position:** Staff Physician, UO Nefrologia e Dialisi, IRCCS Ospedale Pediatrico Bambino Gesù, Rome, Italy since June 1, 2006

**H-index** (Scopus): 20

**Language skills:** Bilingual italian/english; good knowledge of french.

### Academic training

**1992-1998:** Università degli Studi di Pavia; Medical Doctor degree (110/110 cum laude).

**1999-2004:** Residency program in Pediatrics, Università degli Studi di Pavia e di Roma “La Sapienza”; Specialist in Pediatrics degree (70/70 cum laude).

### Previous appointments

**1998-99:** Research Fellow, Division of Pediatric Rheumatology, Università di Pavia. Chief: Dr. F. De Benedetti

**2002-2004:** Research Fellow, Division of Immunology, Children’s Hospital, Harvard Medical School, Boston, MA, U.S.A. Chief: Prof. R.S. Geha

**2005-2006:** Clinical Fellow in Pediatric Rheumatology, Ospedale Pediatrico “Bambino Gesù”, Rome. Chief: Prof. A.G. Ugazio

**2017:** Honorary Consultant, Great Ormond Street Hospital for Children, Renal Unit, London, United Kingdom March – December 2017

### Honors

**2017 –date:** Council member, European Society of Pediatric Nephrology

**2017–date:** Co-chair, Immune-mediated glomerulopathies Working Group, European Rare diseases Kidney NETwork (ERKNET)

**2016–date:** Chair, Nephrotic Syndrome Working Group, European Society of Pediatric Nephrology

**2016–date:** Associate Editor, Nephron Experimental Nephrology and Genetics – Case studies in Genetics

### Memberships

International Pediatric Nephrology Association

American Society of Nephrology

European Society of Pediatric Nephrology

Italian Society of Pediatric Nephrology  
Italian Society of Pediatrics

#### Experience in clinical trials

- Participant in the NEMO study sponsored by AIFA and coordinated by the Mario Negri Institute, Bergamo, Italy (PI: Pror. G. Remuzzi)
- PI of the Investigator Initiated Study sponsored by Alexion Pharmaceuticals on the use of eculizumab in a DDD patient
- Participant in the OFA2 study on the use of ofatumumab in steroid-dependent forms of idiopathic nephrotic syndrome
- PI of the MESNEPH study on the use of mesenchymal stromal cells for severe forms of frequently-relapsing or steroid-dependent forms of nephrotic syndrome
- Co-PI of the BELNEPH trial on the use of belimumab for frequently relapsing forms of nephrotic syndrome
- Participant in the OFA3 study comparing ofatumumab to mycophenolate mofetil in children with steroid-dependent forms of idiopathic nephrotic syndrome
- Local PI in the ALXN1210 trial evaluating a long-lasting form of anti-C5 monoclonal antibody in the treatment of atypical hemolytic uremic syndrome
- Local PI in the CL\_168 trial evaluating the use of avacopan, an anti-C5a receptor inhibitor in C3 glomerulopathy

#### Top 5 Publications

Colucci M, Carsetti R, Cascioli S, Casiraghi F, Perna A, Ravà L, Ruggiero B, Emma F, **Vivarelli M**. B Cell Reconstitution after Rituximab Treatment in Idiopathic Nephrotic Syndrome. J Am Soc Nephrol. 2016 Impact Factor 9,3

**Vivarelli M**, Emma F, Pellé T, Gerken C, Pedicelli S, Diomedi-Camassei F, Waldegger S, Ronco P, Debiec A: Alloimmune membranous nephropathy with anti-neutral endopeptidase antibodies: genetic homogeneity but IgG subclass-dependent clinical variability. Kidney International 2015 Impact Factor 8,5

Colucci M, Stockmann H, Butera A, Masotti A, Baldassarre A, Giorda E, Petrini S, Rudd PM, Sitia R, Emma F, **Vivarelli M**: Sialylation of N-Linked Glycans Influences the Immunomodulatory Effects of IgM on T Cells. J Immunol. 2014 Impact Factor 4,9

**Vivarelli M**, Pasini A, Emma F: Eculizumab for the treatment of dense deposit disease N Engl J Med. 2012 Impact Factor 55,8

**Vivarelli M**, McDonald D, Miller M, Cusson N, Kelliher M, Geha R: RIP links TLR4 to Akt and is essential for cell survival in response to LPS stimulation. J. Exp. Med. 2004 Impact Factor 12,5

#### Other Publications

Debiec H, Dossier C, Letouzé E, **Vivarelli M**, Putler RK, MS, Gillies CE, Ars E, Jacqz-Aigrain E, Elie V, Colucci M, Debette M, Amouyel P, Elalaoui SC, Sefiani A, Dubois V, Simon T, Kretzler M, Ballarin J, Emma F, Sampson MG, Deschênes G and Pierre Ronco. Trans-ethnic, integrative genome-wide analysis reveals immune-related risk alleles and their phenotypic correlates in pediatric steroid-sensitive nephrotic syndrome. *J Am Soc Nephrol*, 2018 Jul;29(7):2000-2013

Starc N, Li M, Algeri M, Conforti A, Tomao L, Pitisci A, Emma F, Montini G, Messa P, Locatelli F, Bernardo ME, **Vivarelli M**. Phenotypic and functional characterization of mesenchymal stromal cells isolated from pediatric patients with severe idiopathic nephrotic syndrome. *Cytotherapy*. 2018 Mar;20(3):322-334

Iatropoulos P, Daina E, Curreri M, Piras R, Valoti E, Mele C, Bresin E, Gamba S, Alberti M, Breno M, Perna A, Bettoni S, Sabadini E, Murer L, **Vivarelli M**, Noris M, Remuzzi G; Registry of Membranoproliferative Glomerulonephritis/C3 Glomerulopathy; Nastasi. Cluster Analysis Identifies Distinct Pathogenetic Patterns in C3 Glomerulopathies/Immune Complex-Mediated Membranoproliferative GN. *J Am Soc Nephrol*. 2018 Jan;29(1):283-294.

Colucci M, Corpetti G, Emma F, **Vivarelli M**. Immunology of idiopathic nephrotic syndrome. *Pediatr Nephrol*. 2017 Impact Factor 2,8

Deschênes G, **Vivarelli M**, Peruzzi L; ESPN Working Group on Idiopathic Nephrotic Syndrome. Variability of diagnostic criteria and treatment of idiopathic nephrotic syndrome across European countries. *Eur J Pediatr*. 2017 Impact Factor 1,8

Goodship TH, Cook HT, Fakhouri F, Fervenza FC, Frémeaux-Bacchi V, Kavanagh D, Nester CM, Noris M, Pickering MC, Rodríguez de Córdoba S, Roumenina LT, Sethi S, Smith RJ; **Conference Participants**. Atypical hemolytic uremic syndrome and C3 glomerulopathy: conclusions from a "Kidney Disease: Improving Global Outcomes" (KDIGO) Controversies Conference. *Kidney Int*. 2017 Impact Factor 7,7

**Vivarelli, M**, Massella L, Ruggiero B, Emma F. Minimal change disease. *Clin J Am Soc Nephrol* 2017 Impact Factor 4,6

Dolcemascolo V, **Vivarelli M**, Colucci M, Diomedi-Camassei F, Piras R, Alberti M, Emma F. Nephrotic-Range Proteinuria and Peripheral Edema in a Child: Not Only Idiopathic Nephrotic Syndrome. *Case Rep Nephrol Dial*. 2016

**Vivarelli M**, Colucci M, Bonanni A, Verzani M, Serafinelli J, Emma F, Ghiggeri G. Ofatumumab in two pediatric nephrotic syndrome patients allergic to rituximab. *Pediatr Nephrol*. 2017 Impact Factor 2,8

Ruggiero B, **Vivarelli M**, Gianviti A, Pecoraro C, Peruzzi L, Benetti E, Ventura G, Pennesi M, Murer L, Coppo R, Emma F. Outcome of childhood-onset full-house nephropathy. *Nephrol Dial Transplant*. 2016 Impact factor 3,5

Briggs TA, Rice GI, Adib N, Ades L, Barete S, Baskar K, Baudouin V, Cebeci AN, Clapuyt P, Coman D, De Somer L, Finezilber Y, Frydman M, Guven A, Heritier S, Karall D, Kulkarni ML, Lebon P, Levitt D, Le Merrer M, Linglart A, Livingston JH, Navarro V, Okenfuss E, Puel A, Revencu N, Scholl-Bürgi S, **Vivarelli M**, Wouters C, Bader-Meunier B, Crow YJ. Spondyloenchondrodysplasia Due to Mutations in ACP5: A Comprehensive Survey. *J Clin Immunol*. 2016 Impact Factor 3,1

Iatropoulos P, Noris M, Mele C, Piras R, Valoti E, Bresin E, Curreri M, Mondo E, Zito A, Gamba S, Bettoni S, Murer L, Frémeaux-Bacchi V, **Vivarelli M**, Emma F, Daina E, Remuzzi G. Complement gene variants determine the risk of immunoglobulin-associated MPGN and C3 glomerulopathy and predict long-term renal outcome. *Mol Immunol*. 2016 Impact Factor 2,9

Loirat C, Fakhouri F, Ariceta G, Besbas N, Bitzan M, Bjerre A, Coppo R, Emma F, Johnson S, Karpman D, Landau D, Langman CB, Lapeyraque AL, Licht C, Nester C, Pecoraro C, Riedl M, van de Kar NC, Van de Walle J, **Vivarelli M**, Frémeaux-Bacchi V; for HUS International. An international consensus approach to the management of atypical hemolytic uremic syndrome in children. *Pediatr Nephrol*. 2015 Impact factor 2,8

Rosado MM, Bernardo ME, Scarsella M, Conforti A, Giorda E, Biagini S, Cascioli S, Rossi F, Guzzo I, **Vivarelli M**, Dello Strologo L, Emma F, Locatelli F, Carsetti R: Inhibition of B-cell proliferation and antibody production by mesenchymal stromal cells is mediated by T cells. *Stem Cells Dev*. 2014 Impact Factor 3,7

**Vivarelli M**, Emma F: Treatment of C3 Glomerulopathy with Complement Blockers. *Semin Thromb Hemost*. 2014 Impact Factor 3,8

Pasini A, Bracaglia C, Aceti A, **Vivarelli M**, Lavacchini A, Miniaci A, De Benedetti F, Montini G: Renal involvement in Hypocomplementemic Urticarial Vasculitis Syndrome: a report of three paediatric cases. *Rheumatology*. 2014 Impact Factor 4,4

Ruggenti P, Ruggiero B, Cravedi P, **Vivarelli M**, Massella L, Marasà M, Chianca A, Rubis N, Ene-Iordache B, Rudnicki M, Pollastro RM, Capasso G, Pisani A, Pennesi M, Emma F, and Remuzzi G for the Rituximab in Nephrotic Syndrome of Steroid-Dependent or Frequently Relapsing Minimal Change Disease Or Focal Segmental Glomerulosclerosis (NEMO) Study Group. Rituximab in Steroid-Dependent or Frequently Relapsing Idiopathic Nephrotic Syndrome *J Am Soc Nephrol*. 2014 Impact Factor 9,3

Ruggiero B, **Vivarelli M**, Gianviti A, Benetti E, Peruzzi L, Barbano G, Corona F, Ventura G, Pecoraro C, Murer L, Ghiggeri GM, Pennesi M, Edefonti A, Coppo R, Emma F: Lupus nephritis in children and adolescents: results of the Italian Collaborative Study. *Nephrol Dial Transplant*. 2013 Impact Factor 3,5

Strippoli R, Carvello F, Scianaro R, Pasquale LD, **Vivarelli M**, Petrini S, Bracci-Laudiero L, Benedetti FD: Chronic exposure to interleukin-6 amplifies the response to toll-like

receptor ligands: Implication on the pathogenesis of macrophage activation syndrome. *Arthritis Rheum.* 2011 Impact factor 7,7

D'Amico A, Catteruccia M, De Benedetti F, **Vivarelli M**, Colucci M, Cascioli S, Bertini E. Rituximab in a childhood-onset idiopathic refractory chronic inflammatory demyelinating polyneuropathy. *Eur J Paediatr Neurol.* 2012 Impact Factor 2,1

Capolunghi F, Rosado MM, Cascioli S, Girolami E, Bordasco S, **Vivarelli M**, Ruggiero B, Cortis E, Insalaco A, Fantò N, Gallo G, Nucera E, Loiarro M, Sette C, De Santis R, Carsetti R, Ruggiero V. Pharmacological inhibition of TLR9 activation blocks autoantibody production in human B cells from SLE patients. *Rheumatology (Oxford).* 2010 Impact Factor 4,7

**Vivarelli M**, Moscaritolo E, Tsalkidis A, Massella L, Emma F Time for initial response to steroids is a major prognostic factor in idiopathic nephrotic syndrome. *J Pediatr.* 2010 Impact Factor 3,7

Parodi A, Davì S, Pringe AB, Pistorio A, Ruperto N, Magni-Manzoni S, Miettunen P, Bader-Meunier B, Espada G, Sterba G, Ozen S, Wright D, Magalhães CS, Khubchandani R, Michels H, Woo P, Iglesias A, Guseinova D, Bracaglia C, Hayward K, Wouters C, Grom A, **Vivarelli M**, Fischer A, Breda L, Martini A, Ravelli A, Lupus Working Group of the Paediatric Rheumatology European Society. Macrophage activation syndrome in juvenile systemic lupus erythematosus: a multinational multicenter study of thirty-eight patients. *Arthritis Rheum.* Impact Factor 7,7

Dello Strologo L, Guzzo I, Laurenzi C, **Vivarelli M**, Parodi A, Barbano G, Camilla R, Scozzola F, Amore A, Ginevri F, Murer L: Use of rituximab in focal glomerulosclerosis relapses after renal transplantation. *Transplantation,* 2009 Impact Factor 3,8

Kengne-Wafo S, Massella L, Diomedei-Camassei F, Gianviti A, **Vivarelli M**, Greco M, Stringini GR and Emma F. Risk factors for cyclosporin A nephrotoxicity in children with steroid-dependant nephrotic syndrome. *Clin J Am Soc Nephrol.* 2009 Impact Factor 4,6

**Vivarelli M**, D'Urbano LE, Stringini G, Ghiggeri GM, Caridi G, Donn R, Tozzi AE, Emma F, De Benedetti F: Association of the macrophage migration inhibitory factor -173\*C allele with childhood nephrotic syndrome. *Pediatr Nephrol.* 2008 Impact Factor 2,8

**Vivarelli M**, D'Urbano LE, Insalaco A, Lunt M, Jury F, Tozzi AE, Ravelli A, Martini A, Donn R, De Benedetti F: Macrophage migration inhibitory factor (MIF) and oligoarticular JIA: association of MIF promoter polymorphisms with response to intra-articular glucocorticoids. *Clin Exp Rheumatol.* 2007 Impact Factor 2,7

Plebani A, Lougaris V, Soresina A, Meini A, Zunino F, Losi CG, Gatta R, Cattaneo G, Nespoli L, Marinoni M, Capolunghi F, **Vivarelli M**, Quinti I, Carsetti R. A novel

immunodeficiency characterized by the exclusive presence of transitional B cells unresponsive to CpG. *Immunology*. 2007 Impact Factor 4

De Benedetti F, Rucci N, Del Fattore A, Peruzzi B, Paro R, Longo M, **Vivarelli M**, Muratori F, Berni S, Ballanti P, Ferrari S, Teti A. Impaired skeletal development in interleukin-6-transgenic mice: a model for the impact of chronic inflammation on the growing skeletal system. *Arthritis Rheum*. 2006 Impact Factor 8,9

De Benedetti F, Meazza C, **Vivarelli M**, Rossi F, Pistorio A, Lamb R, Lunt M, Thomson W, Ravelli A, Donn R, Martini A; British Paediatric Rheumatology Study Group. Functional and prognostic relevance of the -173 polymorphism of the macrophage migration inhibitory factor gene in systemic-onset juvenile idiopathic arthritis. *Arthritis Rheum*. 2003 Impact Factor 8,9

De Benedetti F, Meazza C, Oliveri M, Pignatti P, **Vivarelli M**, Alonzi T, Fattori E, Garrone S, Barreca A, Martini A. Effect of IL-6 on IGF binding protein-3: a study in IL-6 transgenic mice and in patients with systemic juvenile idiopathic arthritis. *Endocrinology*. 2001 Impact Factor 4,1

Pignatti P, **Vivarelli M**, Meazza C, Rizzolo MG, Martini A, De Benedetti F. Abnormal regulation of interleukin 6 in systemic juvenile idiopathic arthritis. *J Rheumatol*. 2001 Impact Factor 3,1

De Benedetti F, Pignatti P, **Vivarelli M**, Meazza C, Ciliberto G, Savino R, Martini A. In vivo neutralization of human IL-6 (hIL-6) achieved by immunization of hIL-6-transgenic mice with a hIL-6 receptor antagonist. *J Immunol*. 2001 Impact Factor 4,9

De Benedetti F, **Vivarelli M**, Pignatti P, Oliveri M, Massa M, Pistorio A, Martini A. Circulating levels of soluble E-selectin, P-selectin and intercellular adhesion molecule-1 in patients with juvenile idiopathic arthritis. *J Rheumatol*. 2000 Impact Factor 3,1

### Book Chapters

Prohászka, Z., **Vivarelli, M.** & Reusz, G. S. 2015. Complement-mediated glomerular injury in children. Avner, E.D., Harmon, W.E., Niaudet, P., Yoshikawa, N., Emma, F., Goldstein, S.L. (Eds.) *Pediatric Nephrology, Seventh Edition*. Springer Berlin Heidelberg, p. 883-926.

Licht C, **Vivarelli M**, Sethi S. 2016. C3 Glomerulopathies. D.F. Geary, F. Schaefer (eds.), *Pediatric Kidney Disease*, Springer-Verlag Berlin Heidelberg 2016 in press

Thurman J, **Vivarelli M**. 2016. Chapter 21: Complement-Mediated GN and Thrombotic Microangiopathy, Gilbert, *National Kidney Foundation Primer on Kidney Diseases*, Elsevier in press