

SANDRO MAZZAFERRO

Curriculum Vitae

Place: Rome
Date: 21/June/2020

Part I – General Information

Full Name	Sandro Mazzaferro
Spoken Languages	Italian, English

Part II – Education

Type	Year	Institution	Notes (Degree, Experience,...)
University graduation	1979	Sapienza University, Rome	Dr. in Medicine and Surgery
Post-graduate studies	1984	Sapienza University, Rome	Specialty, Internal Medicine Fellow of the Internal Medicine and Nephrology Unit at 2 Medical Clinic Policlinico Umberto I, Rome.
Post-graduate studies	1988	Sapienza University, Rome	Specialty, Nephrology, Fellow of the Nephrology Unit at 2 Medical Clinic Policlinico Umberto I, Rome

Part III – Appointments

IIIA – Academic Appointments

Start	End	Institution	Position
2007	today	Sapienza University of Rome	Associate Professor of Nephrology
2015	2019	Sapienza University of Rome. Post graduate Fellowship in Nephrology Facoltà di Medicina e Odontoiatria e Farmacia e Medicina	- Coordinator
2019	today	Sapienza University of Rome. Post graduate Fellowship in Nephrology Facoltà di Medicina e Odontoiatria, Farmacia e Medicina e Medicina e Psicologia	- Director
2017	today	Sapienza University of Rome – Master in Nefropatie Dialisi e Patologie Cardiovascolari	- Director
2017	Today	International PhD Course on “Arterial Hypertension and Vascular Biology” Universities of Rome Sapienza, Padua and Maastricht.	Teaching staff

IIIB – Other Appointments

Start	End	Institution	Position
2007	today	Sapienza University, Rome Medicine & Surgery Degree Course E	Coordinator, Patologia Integrata II at Polo Pontino Sapienza. Latina
2014	Today	Sapienza University, Rome Medicine & Surgery Degree Course F	Coordinator, Applied Pathology II at Policlinico Umberto I
2014	Today	Sapienza University, Rome Medicine & Surgery Degree Course C	Lecturer - Nephrology
2017	Today	Sapienza University of Rome – Master in Nefropatie Dialisi e Patologie Cardiovascolari	Director
2012	Today	Sapienza University of Rome. Nurse Degree Course Q	Lecturer Nephrology
2006	2009	Società Italiana Nefrologia, Gruppo di Studio Elementi traccia e Metabolismo Minerale	Coordinator
2006	2006	Società Italiana Nefrologia, stesura Linee Guida di Terapia dell'Iperparatiroidismo Secondario	Coordinator
1988	2007	Nephrology Unit at Policlinico Umberto I, Sapienza University, Rome	Physician
2007	2018	ICOT Hospital at Polo Pontino Sapienza	Director of the Nephrology and Dialysis Unit (Unità Operativa Dipartimentale, UOD)
2018	Today	Policlinico Umberto I Hospital, Sapienza University, Rome	Director of the Nephrology Unit (Unità Operativa Complessa, UOC)

Part IV – Teaching experience

Year	Institution	Lecture/Course
2007	Sapienza University, Rome. – Medicine & Surgery Degree Course E	Course: Patologia Integrata II, Nefrologia
2014	Sapienza University, Rome. Medicine & Surgery Degree Course F	Applied Pathology II, Nephrology
2014	Sapienza University, Rome Medicine & Surgery Degree Course C	Lecturer: Nephrology
2017	Sapienza University, Rome. Master	Master I level, Nefropatie Dialisi e Patologie Cardiovascolari
2012	Sapienza University of Rome. Nurse Degree Course Q	Lecturer Infermieristica in area specialistica
1991-2007	Sapienza University, Rome	Lecturer: Fellowship Course program in Nephrology. Sapienza University Rome

Part V - Society memberships, Awards and Honors

Year	Title
2019-2023	Council Board Member. Società Italiana Nefrologia (SIN).
2018-2020	Vice-Chair. ERA-EDTA (European Renal Association – European Dialysis Transplantation Association) Working Group on Chronic Kidney Disease – Mineral Bone Disorders (ERA-EDTA WG – CKD-MBD)
2018-2020	Board Member. EUROD (European Renal Osteodystrophy) study group of the ERA-EDTA
2017-2020	FASN. Fellow of the American Society of Nephrology (ASN)
2015-2020	FERA. Fellow of the European Renal Association – European Dialysis Transplantation Association (ERA-EDTA)
2013-2018	Board member, Working Group on CKD-MBD
2008-2020	Member, International Society of Nephrology (ISN).
2007-2020	Member, American Society of Nephrology (ASN).
2003-2007	Council Board Member, Società Italiana Osteoporosi e Malattie Metaboliche dello Scheletro (SIOMMMS).
2000-2020	Member, Società Italiana Osteoporosi e Malattie Metaboliche dello Scheletro (SIOMMMS).
1990 – 2020	Member, ERA-EDTA Society
1994-1997	Council Board Member, Società Italiana Metabolismo Minerale (SIMM).
1985 – 2020	Member, Società Italiana Nefrologia (SIN)
1982-2000	Member, Società Italiana Metabolismo Minerale (SIMM).
2008 - 2016	Editorial Board, Journal of Nephrology
2013-2016	Editorial Board, Nephrology Dialysis Transplantation
2016 – today	Area Editor, Journal of Nephrology
2005	KDIGO Controversies Conference on Bone biopsy/histology. Workgroup of Invited KOL (Key Opinion Leader). (15-17 Sept, Madrid – Spain)
2019	KDIGO Clinical Practice Conference at The Carlyle Club in Alexandria, Virginia, USA. Invited as KOL. 4-5 Nov 2019

Part VI - Funding Information [grants as PI-principal investigator or I-investigator]

Year	Title	Program	Grant value
2010	Bone cell regulating factors in Chronic Kidney Disease	PI. Progetti di Ricerca Ateneo Sapienza	9.000,00

2010	Multicenter Study on the prevalence of Vascular Calcifications and Vertebral Fractures in Parathyroidectomized Dialysis patients	PI. Start-up Grant Application Società Italiana Nefrologia	90.000,00
2011	Renal osteodystrophy and bone cell regulating factors in dialysis patients	PI. Progetti di Ricerca Ateneo Sapienza	14.000,00
2010	Use of calcimimetic vs oral paricalcitol in renal transplant patients affected with persistent secondary hyperparathyroidism. Pilot study	PI. Abbott	63.000,00
2015	Correlazione tra malattia ossea e danno vascolare in soggetti con diabete mellito di tipo 2	PI. Progetti di Ricerca Ateneo Sapienza	5.000,00
2017	Variazioni dell'estrazione periferica di ossigeno (Oxygen Extraction Ratio, OER) in corso di emodialisi ed eventi clinici	PI. Progetti di Ricerca Ateneo Sapienza	8.000,00
2018	Aldosterone, Klotho e danno vascolare in pazienti con insufficienza renale cronica	PI. Progetti di Ricerca Ateneo Sapienza	10.000,00
2019	Sclerostin expression in the vessel walls of End Stage Renal Disease (ESRD) patients	PI. Progetti di Ricerca Ateneo Sapienza	25.000,00
2019	Fractures and CKD-MBD	PI. Grant Application Società Italiana Nefrologia	38.800,00
2019	Bone material strength and fracture risk in subjects with end stage chronic kidney disease on dialysis	I. International Grant Application, Amgen	148.000,00

Part VII – Research Activities

Keywords

CKD-MBD

Brief Description

The summa of the laboratory derangements of secondary hyperparathyroidism (Calcium, phosphate, parathyroid hormone, vitamin D metabolites and historical or novel biomarkers), the bone specific uremic lesions (known as renal osteodystrophy) and the accelerated process of vascular calcifications have been merged since 2005 into a novel “syndrome”(*) with the aim of underlying the intricate pathogenetic relationship existing among them that are responsible for a significant proportion of the dramatic death rate of renal failure patients. This is due to the strong association of this CKD-MBD “syndrome” with the cardiovascular disease that plagues renal patients. I had the honour of being invited as key opinion leader to the meeting from which this novel clinical condition was generated (Madrid 2005). Importantly, and as a further and eventual initiative, I am one of the nephrologists that initiated the ERA-EDTA working group on CKD-MBD, which is one of the most active WG

		of the Society, as evidenced by the produced papers. By chance, I am now the Vice-Chair of this group.
		(* see the paper “Is CKD-MBD really a syndrome? Cozzolino M., Mazzaferro S. Nephrol Dial Transplant 2014; 29 (10),1815-1820
Chronic Failure Hemodialysis	Renal -	In recent years we have developed two definitely original papers examining the behaviour of Oxygen Extraction Ratio (OER) during dialysis and the measurement of the blood flow in the vascular access (arterio-venous fistula) of haemodialysis patients. In the first study we found a significant association between OER values (a very simple to calculate parameter, available in most of the dialysis centres) and the mortality rate of patients, thus pointing to a potential clinical value, now investigated in a prospective multi-centre ongoing study. In the second study we proposed an original, simple and cheap method to measure the blood flow of recently implanted fistulas which is very important to check early signs of failure requiring prompt treatment. Finally, we developed a control system of clinical and physical parameters to check the long-term functioning and outcome of the vascular accesses (both native fistulas and central venous catheters) aiming at improving routine surveillance by the nurses and doctors. A multi-centre study is ongoing.
Renal Osteodystrophy		The complex morphologic modifications occurring in bone of renal patients have been described in my published and cited papers in the past. Importantly, bone histology and histomorphometry data from our group have been among the first to be reported in the literature in renal patients. More recently, a revival effort is ongoing in Europe to realize a European registry of bone biopsy (EUROD Initiative), secondary to the increased interest of bone as an endocrine organ with systemic actions.
Bone markers		In the early phases of my research studies I was interested in the laboratory methods of assays of divalent ions (calcium, phosphate and magnesium: spectrophotometric, colorimetric and ion selective methods) and of hormones (PTH and vitamin D metabolites: RIA, ELISA and HPLC methods). Eventually, aiming at recognizing bone histologic derangements of renal patients without performing the invasive bone biopsy, a number of biomarkers have been evaluated in their clinically potential diagnostic value. From PTH (whole, intact, fragments) to Alkaline Phosphatase (both total and bone specific) or Osteocalcin, vitamin D metabolites, ILGF, etc. Importantly, due to recent discoveries on the endocrine role of bone, novel biomarkers, like FGF23 (and Klotho), Sclerostin, undercarbossilated Osteocalcin and Matrix GLA protein among others are emerging and part of our clinical research.
Vitamin D		Vitamin D physiology, pathophysiology and clinical implications in the general population and in deep details in chronic renal failure (every stage) is described in our published papers. Starting with assay aspects in the early studies, I have then considered the clinical applications as a drug in secondary hyperparathyroidism and in hypoparathyroidism. Clinical aspects have been evaluated not only for the native molecules but also for the analogues produced by the industry. More recently, evolutionary aspects and the involvement with inflammatory processes have been examined.
Vascular Calcifications		The sophisticated and still incompletely understood processes of bone calcification, now recognized to occur in the vessel walls of aging people,

		diabetic and renal patients have been studied in our publications for their clinical significance in renal patients. We have evaluated the clinical impact of cardiac and vascular calcifications in renal patients either in conservative (not on dialysis) or on substitutive therapies (dialysis or transplant). Also, Calciphylaxis, recently renamed Calcific Uremic Arteriopathy, which seems to represent the most severe form of vascular calcification has been the subject of our clinical research.
Chronic Renal Failure - Renal transplant		Besides bone disease and fractures, and cardiac and vascular calcifications, also some pharmacokinetic aspects of immunosuppressive drugs (cyclosporine) have been the subject of our researches.
Chronic Renal failure - Conservative therapy		The role of blood pressure, proteinuria and serum phosphate in the progression of chronic renal failure is the subject of some of our clinical observations

Part VIII – Summary of Scientific Achievements

Product type	Number	Data Base	Start	End
Papers [international]	133	Scopus	1980	2020
Papers [national]	23	Scopus	1980	2020
Books [scientific]	3	Scopus	2015	2020
Books [teaching]				

Total Impact factor	414,35
Total Citations	2222
Average Citations per Product	14,26
Hirsch (H) index	26
Normalized H index*	0,65
Impact Factor, 10y (2009-today)	290,105

*H index divided by the academic seniority.

Part IX– Selected Publications

List of the publications selected for the evaluation. For each publication report title, authors, reference data, journal IF (if applicable), citations, press/media release (if any).

N°	Title	Authors	Reference	IF	Citations
1	Direct bone effects of calcimimetics in chronic kidney disease? (2019)	Mazzaferro, S., Pasquali, M.	Kidney International, 2019; 95 (5), pp. 1012-1014.	8,306	0
2	Bone and mineral disorders in chronic kidney disease: implications for cardiovascular health and ageing in the general population (2018)	Covic, A., Vervloet, M., Massy, Z.A., Torres, P.U., Goldsmith, D., Brandenburg, V., Mazzaferro, S., Evenepoel, P., Bover, J.,	The Lancet Diabetes and Endocrinology, 2018; 6 (4), pp. 319-331.	24,54	28

		Apetrii, M., Cozzolino, M.			
3	Bone, inflammation and the bone marrow niche in chronic kidney disease: What do we know? (2018)	Mazzaferro, S., Cianciolo, G., De Pascalis, A., Guglielmo, C., Urena Torres, P.A., Bover, J., Tartaglione, L., Pasquali, M., La Manna, G.	Nephrology Dialysis Transplantation, 2018; 33 (12), pp. 2092-2100.	4,189	6
4	Vitamin D: A dynamic molecule. How relevant might the dynamism for a vitamin be? (2016)	Mazzaferro, S., Pasquali, M.	Nephrology Dialysis Transplantation, 31 (1), pp. 23-30.	4,47	15
5	Soluble α -Klotho serum levels in chronic kidney disease (2015)	Rotondi, S., Pasquali, M., Tartaglione, L., Muci, M.L., Mandanici, G., Leonangeli, C., Sales, S., Farcomeni, A., Mazzaferro, S.	International Journal of Endocrinology, 2015, art. no. 872193.	2,287	34
6	Bone: A new endocrine organ at the heart of chronic kidney disease and mineral and bone disorders (2014)	Vervloet, M.G., Massy, Z.A., Brandenburg, V.M., Mazzaferro, S., Cozzolino, M., Ureña-Torres, P., Bover, J., Goldsmith, D.	The Lancet Diabetes and Endocrinology, 2 (5), pp. 427-436.	19	74
7	Is chronic kidney disease-mineral bone disorder (CKD-MBD) really a syndrome? (2014)	Cozzolino, M., Ureña-Torres, P., Vervloet, M.G., Brandenburg, V., Bover, J., Goldsmith, D., Larsson, T.E., Massy, Z.A., Mazzaferro, S.	Nephrology Dialysis Transplantation, 2014; 29 (10), pp. 1815-1820.	3,577	64
8	VDRA therapy is associated with improved survival in dialysis patients with serum intact PTH \leq 150 pg/mL: Results of the Italian FARO Survey (2012)	Cozzolino, M., Brancaccio, D., Cannella, G., Messa, P., Gesualdo, L., Marangella, M., Lodeserto, C., Pozzato, M., Rombolà, G., Costanzo, A.M., Di Luzio Paparatti, U., Mazzaferro, S.	Nephrology Dialysis Transplantation, 27 (9), pp. 3588-3594.	3,371	46
9	The treatment of hyperphosphataemia in CKD: Calcium-based or calcium-free phosphate binders? (2011)	Cozzolino, M., Mazzaferro, S., Brandenburg, V.	Nephrology Dialysis Transplantation, 26 (2), pp. 402-407.	3,396	33
10	The bone and the kidney (2010)	Mazzaferro, S., Pasquali, M., Pirrò, G., Rotondi, S., Tartaglione, L.	Archives of Biochemistry and Biophysics, 503 (1), pp. 95-102.	3,559	25
11	Progression of coronary artery calcification in renal transplantation and the role	Mazzaferro, S., Pasquali, M., Taggi, F., Baldinelli, M., Conte, C.,	Clinical Journal of the American Society of	6,2	52

	of secondary hyperparathyroidism and inflammation (2009)	Muci, M.L., Pirozzi, N., Carbone, I., Francone, M., Pugliese, F.	Nephrology, 4 (3), pp. 685-690.		
12	Parathyroidectomy as a therapeutic tool for targeting the recommended NKF-K/DOQITM ranges for serum calcium, phosphate and parathyroid hormone in dialysis patients (2008)	Mazzaferro, S., Pasquali, M., Farcomeni, A., Vestri, A.R., Filippini, A., Romani, A.M., Barresi, G., Pugliese, F.	Nephrology Dialysis Transplantation, 23 (7), pp. 2319-2323.	3,396	35
13	Vascular calcification and uremia: What do we know? (2008)	Cozzolino, M., Mazzaferro, S., Pugliese, F., Brancaccio, D.	American Journal of Nephrology, 28 (2), pp. 339-346.	2,961	58
14	Serum levels of calcification inhibition proteins and coronary artery calcium score: Comparison between transplantation and dialysis (2007)	Mazzaferro, S., Pasquali, M., Pugliese, F., Barresi, G., Carbone, I., Francone, M., Sardella, D., Taggi, F.	American Journal of Nephrology, 27 (1), pp. 75-83.	2,961	39
15	Morphometric X-ray absorptiometry in the assessment of vertebral fractures in renal transplant patients (2006)	Mazzaferro, S., Diacinti, D., Proietti, E., Barresi, G., Baldinelli, M., Pisani, D., D'Erasmus, E., Pugliese, F.	Nephrology Dialysis Transplantation, 21 (2), pp. 466-471.	3,396	24
16	Diagnostic value of serum peptides of collagen synthesis and degradation in dialysis renal osteodystrophy (1995)	Mazzaferro, S., Pasquali, M., Ballanti, P., Bonucci, E., Costantini, S., Chicca, S., De Meo, S., Perruzza, I., Sardella, D., Taggi, F., Coen, G.	Nephrology Dialysis Transplantation, 10 (1), pp. 52-58	4,198	55

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