

PERSONAL INFORMATION

Jacopo Burrello – MD, PhD

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Male | 15.05.1987 | Nationality: Italian

Enterprise	University	EPR
<input type="checkbox"/> Management Level	<input type="checkbox"/> Full professor	<input type="checkbox"/> Research Director and 1st level Technologist / First Researcher and 2nd level Technologist
<input type="checkbox"/> Mid-Management Level	<input type="checkbox"/> Associate Professor	<input type="checkbox"/> Level III Researcher and Technologist
<input type="checkbox"/> Employee / worker level	<input checked="" type="checkbox"/> Researcher and Technologist of IV, V, VI and VII level / Technical collaborator	<input type="checkbox"/> Researcher and Technologist of IV, V, VI and VII level / Technical collaborator

WORK EXPERIENCE

CLINICAL Activity

- July 2021 – Today Clinical Activity as Specialist in Internal Medicine – Division of Internal Medicine (Director, Prof. F. Veglio), Città della Salute e della Scienza di Torino, University of Torino (TO), Italy
- August 2013 – July 2018 Hypertension Outpatient Clinic fellowship at Hypertension Excellence Centre – Division of Internal Medicine (Prof. F. Veglio), University of Torino (TO), Italy
- August 2013 – July 2018 Fellow in Internal Medicine – Division of Internal Medicine (Director, Prof. F. Veglio), Città della Salute e della Scienza di Torino, University of Torino (TO), Italy
- April 2017 – September 2017 Fellow in the Emergency Department (Director, Prof. Lupia), Città della Salute e della Scienza di Torino, University of Torino (TO), Italy
- October 2017 – April 2018 Fellow in the Emergency Department (Director, Prof. Cibinel), Giovanni Agnelli Hospital, Pinerolo (TO), Italy

SCIENTIFIC Activity

- 2018-2022 PhD at University of Torino (Doctoral School of Medical Physiopathology) with a project entitled “Circulating extracellular vesicles as biomarkers in cardiovascular disease”.
- 2018-2019 Fellowship at the Laboratory of Molecular and Cellular Cardiology, Departments of Cardiology and Heart Surgery, Cardiocentro Ticino, Lugano (Switzerland) directed by Prof. G. Vassalli and Dr. L. Barile. Research activity focused on the cardioprotective role of extracellular vesicles derived from cardiac progenitor cells and on EV characterization as diagnostic tool for human diseases.
- 2015-2018 Fellowship at the Laboratory of Nephrology and Immunology directed by Prof. G. Camussi (University of Turin); research activity is focused on extracellular vesicles and their potential role in cardiovascular disease.
- 2010-Today Clinical research: epidemiology, diagnosis and treatment of secondary forms of hypertension and in particular primary aldosteronism and monogenic forms of low renin hypertension.
- 2010-Today Basic research: mechanisms involved in autonomous aldosterone production and cell proliferation in aldosterone producing adenomas; genetic and genomic alterations in sporadic and familial hyperaldosteronism.

EDUCATION AND TRAINING

- 2022 PhD in Medical Physiopathology, University of Torino, Italy with a project entitled “Circulating extracellular vesicles as biomarkers in cardiovascular disease”.
- 2018 Specialist in Internal Medicine, University of Torino, Italy, with a final score of 70/70 *cum Laude*, honors and publication recommended, for a thesis entitled “Characterization and Gene Expression Analysis of Serum-derived Extracellular Vesicles in Primary Aldosteronism”, published in Hypertension 2019.
- 2013 Italian National Medical Board Exam.
- 2012 M.D. degree, University of Torino, Torino, Italy, with a final score of 110/110 *cum Laude*, honors and publication recommended, for a thesis entitled: “Visinin-Like 1 Is Upregulated in Aldosterone-Producing Adenomas With KCNJ5 Mutations and Protects From Calcium-Induced Apoptosis”, published in Hypertension 2012.

WORK ACTIVITIES

- Awards** SIIA 2022 Best Abstract Award for the oral communication: “Characterization of Circulating Extracellular Vesicle Surface Antigens in Patients With Primary Aldosteronism”.
- F4LabMed - De Barjac prize for the publication “Immune profiling of plasma-derived EVs identifies Parkinson disease”, published in *Neurology Neuroimmunology & Neuroinflammation*.
- SIIA 2021 Best Abstract Award for the oral communication: “Supervised and unsupervised learning to define the cardiovascular risk of patients according to an extracellular vesicle molecular signature”.
- SIIA 2021 “Alberto Zanchetti” Best Publication Award for the paper “Prevalence of Hypokalemia and PA in 5100 Patients Referred to a Tertiary Hypertension Unit”, published in *Hypertension*.
- Best Oral Communication at the SPRING Young Investigators Meeting (Joined SIIA-SIMI-SIPREC-SISA Societies) for the project: “Supervised and unsupervised learning to define the cardiovascular risk of patients according to an extracellular vesicle molecular signature”.
- Selected among the 10 best applicants for the A.R.C.A. Young Investigator Awards for the project “Circulating EVs as biomarkers in patients after ST-segment elevation myocardial infarction”.
- Young Investigator Award, of the joined Italian- and British-Irish Hypertension Societies (SIIA-BIHS) for the project: “Characterization and gene expression analysis of serum-derived extracellular vesicles in primary aldosteronism”.
- Best Clinical Case Award at the XXXII National Congress of the Italian Society of Hypertension for the oral communication: “Un caso di iperaldosteronismo ed iperkaliemia”.
- Distinguished Thesis Award, of the Italian Society of Hypertension for the thesis entitled: “Visinin-Like 1 Is Upregulated in Aldosterone-Producing Adenomas with KCNJ5 Mutations and Protects from Calcium-Induced Apoptosis”.
- Editorial Activity** Member of the Editorial Board of *Biomedicines* [IF 6.1] (2020-2021).
 Topical Advisory Panel Member of *Biomedicines* [IF 4.8] (2021-to date).
 Member of the Editorial Board of *Frontiers in Endocrinology* [IF 6.1] (2022-to date).
 Member of the Editorial Board of *Frontiers in Cardiovascular Medicine* [IF 5.8] (2022-to date).
- Invited presentations** International Center of Advanced Computing for Medicine, 2022 ICAM Kick-off meeting. Talk entitled: “Supervised and Unsupervised Learning to define the Cardiovascular Risk of patients according to an Extracellular Vesicle Molecular Signature”.
- 31st European Meeting on Hypertension and Cardiovascular Protection, European Society of Hypertension (ESH). Lecture entitled: “*Extracellular vesicles as mediators of vascular damage in primary aldosteronism*”.
- 40th British and Irish Hypertension Society (BIHS) Annual Scientific Meeting – Brighton (UK). Lecture entitled: “*Characterization and gene expression analysis of serum-derived extracellular vesicles in primary aldosteronism*”.
- 6th Progress in Primary Aldosteronism (PIPA-6) Conference; Munich (Germany). Lecture entitled: “*Extracellular vesicles: new players in primary aldosteronism*”.
- Inaugural Virtual Symposium on Urinary Extracellular Vesicles 2022 (International Society for Extracellular Vesicles, ISEV). Talk entitled: “*Identification of a Urine Extracellular Vesicle Signature to predict Renal Outcome after Kidney Transplant*”.
- Grants/Funding** Swiss Heart Foundation Research Grant 2022 application (FF22064). Extracellular Vesicle Surface Markers in Acute Cerebrovascular Syndromes. ELViS –ACS study. Period 2022-2024 (Role: Collaborator).
- Ex-60% - University of Torino Research Grant – Sector: MED09. Characterization of circulating extracellular vesicles as non-invasive biomarkers of rejection in heart transplant recipients. Period: 2022-2023 (Role: Principal Investigator).
- PRIN 2015 (201572SHXJ), Sector: ERC LS3. Regenerative potential of EVs derived from mesenchymal stem cells on epithelial wound healing. Period: 2017-2020 (Role: Collaborator).
- Ex-60% - University of Torino Research Grant – Sector: MED09. Circulating microRNAs carried by Extracellular Vesicles in patients with Primary Aldosteronism. Period: 2019 (Role: Collaborator).

Ex-60% - University of Torino Research Grant – Sector: MED09. Urinary extracellular vesicles as biomarkers of renal allograft dysfunction. Period: 2020 (Role: Collaborator).

The Michael J. Fox Foundation for Parkinson’s Research - Fall 2020 RFA: Parkinson's Pathway Biomarkers. MJFF Grant ID: MJFF-000965. Multiplexed immune-phenotyping of plasma-derived EVs as biomarker for early Parkinson’s disease. Period: 2021-2022 (Role: Collaborator).

NRRP 2022 – Gene therapy and therapy based on RNA technology: “Cellular-derived vesicles as delivery system for RNA-based drugs”. Period: 2022-2024 (Role: Collaborator).

International Collaborations *Germany:*

- Ludwig-Maximilians-University, University Hospital Würzburg, Campus Mitte; Munich.

Switzerland:

- Cellular and Molecular Cardiology Laboratory, Cardiocentro Ticino Foundation and Swiss Institute for Regenerative Medicine; Lugano.
- Laboratory for Cardiovascular Theranostics, Cardiocentro Ticino Foundation; Bellinzona.
- Laboratory for Biomedical Neurosciences, Neurocenter of Southern Switzerland, Ente Ospedaliero Cantonale; Lugano.
- Neurology Clinic and Stroke Centre, Ente Ospedaliero Cantonale; Lugano.

Austria:

- Attoquant Diagnostics GmbH Laboratory; Vienna.

ADDITIONAL INFORMATION

H-Index (SCOPUS)	27
Number of Publications (last 10y)	72
Total number of citations (SCOPUS)	2,838
IF tot last 10y	472.2
IF/publication	7.155

A full list of publications can be found here: <https://pubmed.ncbi.nlm.nih.gov/?term=burrello+j&sort=date>

Relevant Publications

BURRELLO J, Caporali E, Gauthier LG, Pianezzi E, Balbi C, Rigamonti E, Bolis S, Lazzarini E, Biemmi V, Burrello A, Frigerio R, Martinetti G, Fusi-Schmidhauser T, Vassalli G, Ferrari E, Moccetti T, Gori A, Cretich M, Melli G, Monticone S, Barile L. “Risk stratification of patients with SARS-CoV-2 by tissue factor expression in circulating extracellular vesicles”. *Vascul Pharmacol.* 2022 May 18;145:106999. DOI: [10.1016/j.vph.2022.106999](https://doi.org/10.1016/j.vph.2022.106999).

BURRELLO J, Burrello A, Vacchi E, Bianco G, Caporali E, Amongero M, Airale L, Bolis S, Vassalli G, Cereda CW, Mulatero P, Bussolati B, Camici GG, Melli G, Monticone S, Barile L. Supervised and unsupervised learning to define the cardiovascular risk of patients according to an extracellular vesicle molecular signature. *Transl Res.* 2022 Feb 22:S1931-5244(22)00025-1. DOI: [10.1016/j.trsl.2022.02.005](https://doi.org/10.1016/j.trsl.2022.02.005).

BURRELLO J, Bianco G, Burrello A, Manno C, Maulucci F, Pileggi M, Nannoni S, Michel P, Bolis S, Melli G, Vassalli G, Albers GW, Cianfoni A, Barile L, Cereda CW. “Extracellular Vesicle Surface Markers as a Diagnostic tool in Transient Ischemic Attacks”. *Stroke.* 2021 Oct;52(10):3335-3347. The manuscript was commented with an [editorial](#): Herman DM, Doepfner TR, Giebel B. “New Light on the Horizon - Extracellular Vesicles as Diagnostic Tool in Transient Ischemic Attack and Ischemic Stroke”. *Stroke.* 2021 August 4. DOI: [10.1161/STROKEAHA.120.033170](https://doi.org/10.1161/STROKEAHA.120.033170).

BURRELLO J, Tetti M, Forestiero V, Biemmi V, Bolis S, Pomatto MAC, Amongero M, Di Silvestre D, Mauri P, Vassalli G, Camussi G, Williams TA, Mulatero P, Barile L, Monticone S. “Characterization of Circulating Extracellular Vesicle Surface Antigens in Patients With Primary Aldosteronism”. *Hypertension.* 2021 Jul 26. DOI: [10.1161/HYPERTENSIONAHA.121.17136](https://doi.org/10.1161/HYPERTENSIONAHA.121.17136).

Balbi C*, **BURRELLO J***, Bolis S*, Lazzarini E, Biemmi V, Pianezzi E, Burrello A, Caporali E, Grazioli LG, Martinetti G, Fusi-Schmidhauser T, Vassalli G, Melli G, Barile L. “Circulating Extracellular Vesicles Are Endowed with Enhanced Procoagulant Activity in SARS-CoV-2 Infection”. *EBioMedicine.* 2021 May 7;67:103369. [*contributed equally]. The manuscript was commented with an [editorial](#): Whiteside LT. “Procoagulant activity of extracellular vesicles in plasma of patients with SARS-CoV-2 infection”. *EBioMedicine.* 2021 June 3; 68:103411. DOI: [10.1016/j.ebiom.2021.103369](https://doi.org/10.1016/j.ebiom.2021.103369).

BURRELLO J, Amongero M, Buffolo F, Sconfienza E, Forestiero V, Burrello A, Adolf C, Handgriff L, Reincke M, Veglio F, Williams TA, Monticone S, Mulatero P. “Development of a prediction score to avoid confirmatory testing in patients with suspected primary aldosteronism”. *J Clin Endocrinol Metab*. 2021 Mar 25;106(4):e1708-e1716. DOI: [10.1210/clinem/dgaa974](https://doi.org/10.1210/clinem/dgaa974).

BURRELLO J, Burrello A, Stowasser M, Nishikawa T, Quinkler M, Prejbisz A, Lenders JWM, Satoh F, Mulatero P, Reincke M, Williams TA. “The Primary Aldosteronism Surgical Outcome Score for the Prediction of Clinical Outcomes After Adrenalectomy for Unilateral Primary Aldosteronism”. *Ann Surg*. 2020 Dec;272(6):1125-1132. DOI: [10.1097/SLA.0000000000003200](https://doi.org/10.1097/SLA.0000000000003200).

BURRELLO J, Burrello A, Pironi J, Sconfienza E, Forestiero V, Rabbia P, Adolf C, Reincke M, Veglio F, Williams TA, Monticone S, Mulatero P. “Development and validation of prediction models for subtype diagnosis of patients with primary aldosteronism”. *J Clin Endocrinol Metab*. 2020 Oct 1;105(10):dgaa379. DOI: [10.1210/clinem/dgaa379](https://doi.org/10.1210/clinem/dgaa379).

BURRELLO J, Biemmi V, Dei Cas M, Amongero M, Bolis S, Lazzarini E, Bollini S, Vassalli G, Paroni R, Barile L. “Sphingolipid composition of circulating extracellular vesicles after myocardial ischemia”. *Scientific Report*. 2020 Sep 30;10(1):16182. [*contributed equally] DOI: [10.1038/s41598-020-73411-7](https://doi.org/10.1038/s41598-020-73411-7).

BURRELLO J, Bolis S, Balbi C, Burrello A, Provasi E, Elena Caporali E, Gauthier LG, Peirone A, D’Ascenzo F, Monticone S, Barile L, Vassalli G. “An extracellular vesicle epitope profile is associated with acute myocardial infarction”. *J Cell Mol Med*. 2020 Jul 14;24(17):9945-57. DOI: [10.1111/jcmm.15594](https://doi.org/10.1111/jcmm.15594).

BURRELLO J, Gai C, Tetti M, Lopatina T, Deregibus MC, Veglio F, Mulatero P, Camussi G, Monticone S. “Characterization and gene expression analysis of serum-derived extracellular vesicles in primary aldosteronism”. *Hypertension*. 2019 Aug;74(2):359-367. The manuscript was commented with an [editorial](#): Neves KB, Touyz RM. “Extracellular Vesicles as Biomarkers and Biovectors in Primary Aldosteronism”. *Hypertension*. 2019 Aug;74(2):250-252. DOI: [10.1161/HYPERTENSIONAHA.119.12944](https://doi.org/10.1161/HYPERTENSIONAHA.119.12944).

SCIENTIFIC BACKGROUND

After my graduation in Medicine and Surgery, I started my residency in Internal Medicine (2013-2018; Prof. F. Veglio and Prof. P. Mulatero), and I had the opportunity to participate to several clinical and basic research projects on secondary forms of hypertension and, in particular, on primary aldosteronism and monogenic forms of low renin hypertension. My early publications explore different aspects of primary aldosteronism, including genetic forms, symptoms and manifestations, epidemiology, diagnosis, and treatment. From 2015 to 2018, I had a fellowship at the Laboratory of Nephrology and Immunology directed by Prof. G. Camussi (University of Torino); my research activity was focused on extracellular vesicles and their potential role in cardiovascular diseases. After my specialization in Internal Medicine, I spent one year at the Laboratory for Cardiovascular Theranostics, Cardiocentro Ticino, Lugano (Switzerland) directed by Prof. L. Barile, in the context of my PhD on Medical Physiopathology (University of Torino; project on extracellular vesicles as biomarkers in cardiovascular disease). In the last years, I conjugated my expertise areas to characterize extracellular vesicles as biomarkers or biovectors in human diseases and to develop and validate diagnostic models based on their immuno profiling for patients displaying cardiovascular and inflammatory diseases, including myocardial infarction, cerebral transient ischemic attack, Parkinson disease, chronic kidney disease, SARS-CoV2 infection, and graft rejection after heart and kidney transplantation. I had the possibility to actively participate to many projects involving the development of diagnostic/prognostic models, and I acquired a comprehensive knowledge to integrate machine learning algorithms for the analysis of biomolecular data.