

Farzaneh Ketabchi's Curriculum Vitae

Farzaneh Ketabchi

Ph.D of physiology (Cardiovascular and Respiratory Physiology)

Associate Professor

Shiraz University of Medical Sciences

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Educations:

01 Oct2003 –03 Agust 2009

Ph.D. in Medical Physiology: Shiraz University of Medical Sciences, Shiraz, Iran

Advisor: Prof. Gholam Abbas Dehghani

PhD Thesis Title: The effects of hypercapnia with or without acidosis on hypoxic pulmonary vasoconstriction in the isolated ventilated-perfused rabbit lung: Impacts of NO synthase isoforms and reactive oxygen species

01 Oct 1999-23 May 2001

M.Sc in Medical Physiology, Kerman University of Medical Sciences, Kerman, Iran

Advisor: Prof. Hamid Najafipour

M.Sc. Thesis Title: The receptors and role of angiotensin II in knee joint blood flow regulation and role of nitric oxide in modulation of their function

International training:

1. 2007-2008 (20 months), Giessen University Lung Center, Germany. Methods of isolated-ventilated perfused rabbit and mouse (including NOS₂, NOS₃, SOD₁ knockout mouse) lung
2. 2014 (2 weeks), Giessen University Lung Center, Germany, update training in lung histology, in vivo pulmonary hemodynamic and echocardiography in mouse and rat.

Awards:

MSc excellent grade: Kerman University of Medical Sciences, Kerman. Iran, 2000

PhD excellent grade: Shiraz University of Medical Sciences, Shiraz, Iran, 2005

Excellent grade in comprehensive exam, Shiraz University of Medical Sciences, Shiraz, Iran, 2005

Employments:

Lab Instructor of Physiology, Jahrom Medical School, 2002-2003, Jahrom, Iran

Assistant Professor in department of physiology, School of Medicine, Shiraz university of Medical Sciences, Shiraz, Iran, 2010-2019

Research Manager in department of Physiology, 2011-2013, 2016- on

Manager of Medical Physiologic Lab, 2011

Associate Professor, department of physiology, School of Medicine, Shiraz university of Medical Sciences, Shiraz, Iran, 2019-present

Educational experiences:

1. Lecturer for all topics in Medical Physiology, 2010-present
2. Lecturer of Respiratory Physiology for Medical Students, 2010-present
3. Lecturer of Respiratory, Cardiovascular, and Renal Physiology for Pharmacy, Dentistry, and Midwifery Students: 2010-present
4. Lecturer of Respiratory Physiology for MSc and PhD Physiology, 2014-present
5. Lecturer of Respiratory Physiology for International Medical Students, 2015-present

Research outline

All investigations are performed in animal models.

1. Isolated perfused lung in rabbit, rat and mouse: measurements of pulmonary artery pressure and vascular resistance, capillary permeability, gas exchange, and perfusate mediators.
2. The investigation the mechanisms involved in hypoxic and hypercapnic pulmonary vasoconstriction in vivo and in vitro.
3. Lung injury induced by surfactant lavage (Broncho-alveolar lavage, BAL) by saline as a model for surfactant deficiency in newborns and adult people with respiratory distress syndrome (RDS) in rat.
4. Electrocardiogram, systemic blood pressure, cardiac output (Thermo- dilution, Fick equation), right ventricular pressure, right atrial pressure, central venous pressure, vascular resistance, vascular permeability, gas exchange, and blood born mediators in rat.
5. Liver injury induced by partial portal vein ligation and total common bile duct ligation and induction of portal hypertension and liver cirrhosis in rat.
6. Systemic hypertension induced by Goldblatt models of 2 kidneys-1 clip (2K1C) and 1 kidney-1-clip (1K1C) in rat.
7. Lung injury induced by brain ischemia reperfusion injury by middle cerebral artery occlusion (MCAO) as a model for stroke in rat.
8. Model of ischemia/reperfusion injury induced by isoprenaline as a model for myocardial infarction in rat.
9. Induction of different levels of hemorrhagic shock in conscious and unconscious rats.
10. The investigation the role of the vagus nerve on the noted experimental models such as lung injury, brain ischemia, liver cirrhosis, hemorrhagic shock, heart ischemia in rat.
11. The investigation roles of inflammatory reactions by measuring lung and plasma TNF- α , IL-6, IL-10 and endothelin in the lung by Elisa method.
12. Measurements of lung and plasma malondialdehyde (MDA) and NO metabolites by spectrophotometry.

13. Histological investigations of lungs, liver, heart, and spleen in different preparations.
14. Heart rate variability using Powerlab and Kubios softwares in deferent experimental setup.

Publications

Journal Articles :

1. **Ketabchi F***, Khoram MR, Dehghanian AR. Evaluation of electrocardiogram parameters and heart rate variability during blood pressure elevation by phenylephrine in cirrhotic rats. *Cardiovascular Toxicology*. 24 Feruary2024.
2. Ranjbar K, Shahriarirad R, Ebrahimi K, Amirian A, Karoobi M, Mardani P, Erfani A, Fallahi MJ, **Ketabchi F**, Ziaian B*. Demographic, clinical, and paraclinical features of patients operated with the diagnosis of acute descending necrotizing mediastinitis: a retrospective study in Southern Iran. *Journal of Cardiovascular Surgery*. 18: 354, 2023.
3. Mireskandari F, Ardakani YH, Moghadam ES, **Ketabchi F**, Rouini M. Fundamentals and Applications of Isolated Perfused Lung (IPL) Model in the Development of Pulmonary Drug Delivery. *Current Drug Delivery*. 20 (10): 1425-1440, 2023.
4. Fatemikia H, **Ketabchi F***. The cholinergic nervous system and lung diseases: dual inflammatory and anti-inflammatory effects. *Iran J Physiol Pharmacol*. 7:1-18, 2023.
5. Farokhipour M, **Ketabchi F***. The Validity of Heart Rate Variability Obtained from Electrocardiography and Blood Pressure in Rats Subjected to Isoproterenol-Induced Heart Ischemia. *The Journal of Tehran University Heart Center*. 18 (1): 33, 2023.
6. Ziaian B, Shahriarirad R, Fouladi D*, Amirian A, Ranjbar K, Karoobi M, **Ketabchi F**, Mardani P, Fallahi MJ. The effect of suture techniques on the outcome of tracheal reconstruction: An observational study and review of literature. *The Surgeon*. 21 (2): e89-e96, 2023.
7. **Ketabchi F *** and Jamzad S. Therapeutic Approaches in COVID-19 Patients: The Role of the Renin-Angiotensin System. *Canadian Respiratory Journal*. 8698825, 10 p, 2022.
8. Fatemikia H, Dehghanian A, Ziaian B, Farokhipour M and **Ketabchi F***. Roles of alpha-7 nicotinic acetylcholine receptors and spleen in the lung injury induced by a repeated saline lavage in rat. *BMC Pulmonary Medicine*. 22:367, 2022.

9. Khodadadi F, **Ketabchi F**, Khodabandeh Z, Tavassoli A, Lewis GF, Bahaoddini A. The effect of subdiaphragmatic vagotomy on heart rate variability and lung inflammation in rats with severe hemorrhagic shock. *BMC Cardiovascular Disorders*. 22 (1): 1-13, 2022.
10. Khodadadi, F., Bahaoddini, A., Tavassoli, A., **Ketabchi, F***. Heart rate variability and pulmonary dysfunction in rats subjected to hemorrhagic shock. *BMC cardiovascular disorders*. 20(1): 331, 2020.
11. Mirzaei-Damabi, N., Hatam, M., Yeganeh, F., **Ketabchi, F.**, Nasimi, A. Roles of glutamate and GABA of the Kölliker-Fuse nucleus in generating the cardiovascular chemoreflex. *Pflugers Archiv European Journal of Physiology*. 472(8): 1051-1063, 2020.
12. Naseh, M., Dehghanian, A., Keshtgar, S., **Ketabchi, F***. Lung injury in brain ischemia/reperfusion is exacerbated by mechanical ventilation with moderate tidal volume in rats. *American journal of physiology. Regulatory, integrative and comparative physiology*. 319(2): R133-R141, 2020.
13. Sepehrinezhad A; Dehghanian A; Rafati A; **Ketabchi F***. Impact of liver damage on blood-borne variables and pulmonary hemodynamic responses to hypoxia and hyperoxia in anesthetized rats. *BMC cardiovascular disorders*, 20(1),13, 2020.
14. Naseh M, Dehghanian A, **Ketabchi F***. Vagotomy improves hypoxic pulmonary vasoconstriction in rats subjected to brain ischemia/reperfusion injury. *Iranian Journal of Medical Sciences*, 45(4): 250-258, 2020.
15. Jafarinezhad Z, Rafati A, **Ketabchi F**, Noorafshan A, Karbalay-Doust S. Cardioprotective effects of curcumin and carvedilol in doxorubicin-treated rats: Stereological study. *Food Sci Nutr*. 10;7(11):3581-3588, 2019.
16. Khoramzadeh M, Dehghanian A, **Ketabchi F ***. Roles of endothelin B receptors and endothelial nitric oxide synthase in the regulation of pulmonary hemodynamic in cirrhotic rats. *Journal of cardiovascular pharmacology*, 73(3): 178-185, 2019.
17. **Ketabchi F***, Sepehrinezhad A, Dehghanian A. The relationship between liver dysfunction electrocardiographic abnormalities and metabolism in rat. *Journal of clinical and experimental cardiology*, 9(10): 1-7, 2018.
18. **Ketabchi F***, Sepehrinezhad A. The role of estradiol in pulmonary hemodynamics during ventilation with hypoxic gas in female rats subjected to cirrhosis. *Iran South Med J*, 5:362-373, 2018.
19. **Ketabchi F***, Bajoovand S, Adlband M, Naseh M, Nekooeian AA, Mashghoolozekr E. Right ventricular pressure elevated in one-kidney, one clip Goldblatt hypertensive rats. *Clinical and Experimental Hypertension*, 39(4): 344-349, 2017.

20. Mansoori S, Moosavi SM, **Ketabchi F***. The Interaction between Trolox and 4,4'-diisothiocyanatostilbene-2,2'-disulfonic acid on Hypoxic Pulmonary Vasoconstriction in the Isolated Rabbit Lung. *Iranian Journal of Medical Sciences*, 42(3): 284-291, 2017.
21. Karimi Z, **Ketabchi F**, Alebrahimdehkordi N, Fatemikia H, Owji SM, Moosavi SM. Renal ischemia/reperfusion against nephrectomy for induction of acute lung injury in rats. *Ren Fail*, 38(9):1503-1515, 2016.
22. Fatemikia H, **Ketabchi F**, Karimi Z, Moosavi SM. Distant effects of unilateral renal ischemia/reperfusion on contralateral kidney but not lung in rats: the roles of ROS and iNOS. *Can J Physiol Pharmacol.*, 94(5):477-87, 2016.
23. Moradi AM, Aj O, Paydar S, **Ketabchi F**, Moosavi SM, Bolandparvaz S, Abassi HR, Tamadon AD, Mehrabani D. The effect of blood loss in the presence and absence of severe tissue damage on hemodynamic and metabolic parameters in experimental rat model. *Emergency*, 3(4): 150-4, 2015.
24. **Ketabchi F***, Mansoori S, Moosavi SM. The role of anion exchanger on pulmonary vascular response to sustained alveolar hypoxia in the isolated perfused rabbit lung. *Iranian Journal of Medical Sciences*, 40(3):256-63, 2015.
25. **Ketabchi F***, Karimi Z, Moosavi SM. Sustained hypoxic pulmonary vasoconstriction in the isolated perfused rat lung: Effect of α 1-adrenergic receptor agonist. *Iranian Journal of Medical Sciences*, 39(3): 275-281, 2014.
26. Vosooghi M, Ayatollahi SM, Towhidi M, **Ketabchi F**. On summary measure analysis of linear trend repeated measures data: performance comparison with two competing methods. *BMC Med Res Methodol*, 12(1): 33, 2012.
27. **Ketabchi F**, Ghofrani HA, Schermuly RT, Seeger W, Grimminger F, Egemnazarov B, Moosavi SM, Dehghani GA, Weissmann N, Sommer N. Effects of hypercapnia and NO inhibition in sustained hypoxic pulmonary vasoconstriction. *Respiratory research*, 13 (7): 1-16, 2012.
28. **Ketabchi F**, Moosavi SM, Weissmann N, Dehghani GA. Quantitative evaluation of hemodynamic parameters during acute alveolar hypoxia and hypercapnia in the isolated ventilated-perfused rabbit lung. *Physiology and Pharmacology Journal*, 13(2): 199-208, 2009.
29. **Ketabchi F**, Egemnazarov B, Schermuly RT, Ghofrani HA, Seeger W, Grimminger F, Moosavi SM, Dehghani GA, Weissmann N, Sommer N. Effects of hypercapnia with and without acidosis on hypoxic pulmonary vasoconstriction. *Am Journal of Physiology Lung Cell Molecular Biol*, 297(5): L977-83, 2009.

30. Zareian P , **Ketabchi F**, Kargarfard A. Prediction of the maximal voluntary ventilation (MVV) in healthy students of school Jahrom medical. *Jahrom Medical University Journal*. 2(1):17-21, 2005.
31. Zareian P, Zahiri Sh, **Ketabchi F**, Rouzmeh Sh, Kholousi E. The effects of local Gazangebine ointment on wound healing in rabbits. *Mazandaran University of Medical Sciences Journl*, 57:1-8, 2003.
32. Najafoupr H, **Ketabchi F**, The receptors and role of angiotensin II in knee joint blood flow regulation and role of nitric oxide in modulation of their function. *Microcirculation*, 10(5):383-90, 2003.

Conference paper:

1. **Ketabchi F**, Sommer N, Egemnazarov B, Ghofrani HA, Schermuly RT, Seeger W, Grimminger F, Shid-Moosavi M, Dehghani GA, Weissmann N. Effect Of Hypercapnia With And Without Acidosis On Acute And Sustained Hypoxic Pulmonary Vasoconstriction. *American Thoracic Society 2010 International Conference*, May 14-19, 2010 • New Orleans, U.S.A. *Published in Am J Respir Crit Care Med, 181, A6277, 2010.*

Conference presentations:

1. **Ketabchi F**. The symposium chairman and speaker of “Hypoxic pulmonary hypertension: a possible complication of COVID -19 pneumonia. *The 4th International and 25th Iranian Congress of Physiology & Pharmacology, Tehran, Iran*, Online, 2021.
2. **Ketabchi F**. Isolated perfused lung and animal model for hypoxic pulmonary vasoconstriction. *The 4th International and 25th Iranian Congress of Physiology & Pharmacology, Tehran, Iran*, Speaker, Online, 2021.
3. Khoramzadeh M, Dehghanian AR, **Ketabchi F**. The role of inhibition of endothelin-1 receptors on pulmonary hemodynamic in rats subjected to liver dysfunction. Poster presentation, *International Congress of Physiology and Pharmacology, Shahed University, Tehran, Iran*, 2019.
4. Khoramzadeh M, **Ketabchi F**, Dehghanian AR. Roles of ETB receptors in the regulation of pulmonary artery pressure in rats subjected to liver cirrhosis. Poster presentation, *18th International Congress of Liver, Tehran, Iran*, 2018.
5. Naseh M, **Ketabchi F**, Dehghanian AR. Mechanical lung injury is exacerbated by cerebral ischemia/reperfusion in rat, *International Congress of Physiology and Pharmacology, Cha bahar, Iran*, Oral Presentation, 2018.

6. **Ketabchi F**, Sepehri nezhad A, Rafati1 A, Dehghanian A. Common bile duct and portal vein ligations increased right ventricular pressure in rat: a new experimental model. **Thematic poster**, *ERS Congress, Italy, Milan*, September, 2017. **Abstract published in European Respiratory Journal, 2017.**
7. Fatemikia H , **Ketabchi F**, Karimi Z, Moosavi SM. Unilateral renal ischemia/reperfusion affects contralateral kidney compensatory function via reactive oxygen species and inducible nitric oxide synthase in rats. *International Congress of Physiology and Pharmacology, Kashan*, **Oral presentation**, 2015.
8. Karimi Z, **Ketabchi F**, Moosavi SM. **The role of** reactive oxygen species in lung injury induced by renal ischemia/reperfusion in the isolated perfused lung. *International Congress of Physiology and Pharmacology, Kashan*, **Oral presentation**, 2015.
9. Mansoori S, **Ketabchi F**, Moosavi SM. The role of reactive oxygen species and chloride-bicarbonate exchanger on hypoxic pulmonary vasoconstriction in the isolated-perfused rabbit lung, *International Congress of Physiology and Pharmacology, Kashan*, **Oral presentation**, 2015.
10. Karimi Z, Moosavi SM, **Ketabchi F**. Acute lung histopathological alteration induced by acute kidney injury in rats subjected to bilateral or unilateral nephrectomy and bilateral or unilateral renal ischemia/reperfusion, International Congress of Nephrology and Urology, **Poster presentation**, Tehran, 2015.
11. Zangouri V, Khodaei S, **Ketabchi F**, Moosavi SM, Dehghan A, Paydar S. Effects of Voluven on lung injury induced by hemorrhagic shock and femoral fracture in rat, **Poster Discussion**, ERS Congress, Netherland, September 2015. **Abstract published in European Respiratory Journal, 2015.**
12. **Ketabchi F**, Karimi Z, Moosavi SM. The roles of inducible NO synthase and reactive oxygen species on lung injury induced by renal ischemia/reperfusion injury in the isolated perfused rat lung, **Thematic poster**, ERS Congress, Netherland, September, 2015. **Abstract published in European Respiratory Journal, 2015.**
13. **Ketabchi F**, Mansoori S, Moosavi SM. The role of anion exchanger on pulmonary vascular responses to sustained alveolar hypoxia in the isolated perfused rabbit lung, ERS, **Poster presentation**, Germany, Munich, 2014. **Abstract published in European Respiratory Journal, 2015.**

14. **Ketabchi F**, Moosavi SM, Weissmann N, Dehghani GA. Quantitative evaluation of hemodynamic parameters during acute alveolar hypoxia and hypercapnia in the isolated ventilated-perfused rabbit lung. 19th Iranian Congress of Physiology and Pharmacology, **Oral presentation**, Shahid Beheshti University, Tehran, Iran, 2009.
15. **Ketabchi F**, Ghofrani H, Schermuly RT, Seeger W, Grimminger F, Moosavi SM, Dehghani G, Weissmann N, Sommer N. Effects of hypercapnia with and without acidosis on hypoxic pulmonary vasoconstriction. COPD – die schwere Exazerbation Congress, **Oral presentation**, Hamburg, Germany, 2009, **Abstract published, 2009**.
16. **Ketabchi F**, Dehghani G, Schermuly R, Ghofrani H, Seeger W, Grimminger F, Weissmann N. Effect of pH and CO₂ on hypoxic pulmonary vasoconstriction and capillary permeability - impact of NO, **Oral presentation**, Lubeck national society Congress, Germany, 2008, **Abstract published in Pneumologie journal, 2008**.
17. Najafpour H, **Ketabchi F**. The receptors and role of angiotensin II in knee joint blood flow regulation and role of nitric oxide in modulation of their function. 15th Iranian Congress of Physiology and Pharmacology, **Oral presentation**, Shiraz-Iran, 2001.

Published Book

1. Respiratory system for Medical students (in Persian): The second edition, August, 2017
2. Introduction to Power Lab and its application in physiology (in Persian): the first edition. May, 2020

Industrial related research

1. The evaluation of the biological activity of surfactant produced by **Noargen and Tekzima Companies** in ADRS induced by Surfactant washout in Wistar rat.
Status: approved
2. The evaluation of the biological activity of surfactant produced by **Arena Gene Farmed Company** in ADRS induced by Surfactant washout in Wistar rat.
Status: approved

Supervisor

1. Somayeh mansoori, MSc student in Physiology. Title: The roles chloride-bicarbonate exchanger and reactive oxygen species on pulmonary vascular response to alveolar hypoxia in the isolated perfused rabbit lung. 1391-1392.
2. Dr Moradi and Dr Aj, Surgeon Residents. Title: The comparison of effects of blood loss on hemodynamic and metabolic parameters, in the presence and absence of severe tissue damage in rabbit.1391-1392.
3. Supervisor 2 of Zinab Karimi, Ph.D student in Physiology. Title: Characterizing the development of acute lung injury from acute kidney injury along with determining the role of T-cells by comparing rats subjected to bilateral or unilateral nephrectomy and bilateral or unilateral renal ischemia/reperfusion.1390-1394.
4. Mojtaba adlband, MSc student in Physiology. Title: Comparison of right ventricular pressure before and after alveolar hypoxia in 2K1C and 1K1C hypertensive rats: Effects of Trolox and L-NAME. 1393-1394.
5. Maryam Naseh, Ph.D student in Physiology. Title: Lung injury induced by cerebral ischemia-reperfusion with or without mechanical ventilation with moderate tidal volume and the effect of vagotomy in rat. 1394-1397.
6. Ali Sepehrinezhad, MSc student in Physiology. Title: Effects of partial portal vein ligation or common bile duct ligation with or without ovariectomy on lung histology, and pulmonary hemodynamic in rats subjected to mechanical ventilation by normoxic or hypoxic gas. 1395-1396.
7. Maryam Khoramzadeh, MSc student in Physiology. Title: Roles of endothelin B receptor and endothelial NO synthase on functional and structural pulmonary disorders induced by common bile duct and partial portal vein ligations in rat. 1396-1397.
8. Mommadreza Khoram, MSc student in Physiology. Title: Heart rate variabilities and systemic hemodynamic alterations following different cardiovascular stresses in moderate and severe cirrhotic rats: the role of inducible nitric oxide synthase. 1397-1398.

9. Supervisor 2 of Fatemeh Khodadadi, Ph.D student in Physiology. Title: Comparison of heart rate variability, hemodynamic, metabolic and inflammatory parameters in various phases of hemorrhagic shock of normal and vagotomized conscious male rats. 1396-1399.
10. Hossein Fatemikia, Ph.D student in Physiology. Title: Roles of alpha-7 nicotinic acetylcholine- and peroxisome proliferator activated- gamma receptors in the presence or absence of spleen in rats subjected to acute lung injury induced by surfactant depletion. 1398-1401.
11. Maryam Farokhipour, Ph.D student in Physiology. Title: Roles of peroxisome proliferator activated- γ and vitamin D receptors on cardiac electromechanical alterations, and systemic hemodynamic in rats subjected to myocardial ischemia/reperfusion injury. 1398-1401.

Co-Advisor

12. Nazanin Pirooznia, Ph.D student in Biochemistry at Tarbiat Modares University. Title: Encapsulation of Alpha-1 ntitrypsin in PLGA nanoparticles: In Vitro characterization as an effective aerosol formulation in pulmonary diseases. 1391.
13. Hossein Fatemikia. MSc student in Physiology. Title: The roles of reactive oxygen species and inducible nitric oxide synthase in development of alterations in kidneys and lung following unilateral renal ischemia/reperfusion and unilateral nephrectomy. 1391-1392.
14. Nasim Al-Ebrahim, MSc student in Physiology. Title: The role of lymphocytes in development of acute structural and functional disorders of kidneys following bilateral renal ischemia reperfusion as well as induction of acute lung injury. 1392-1393.
15. Dr Zangouri, Surgeon Resident. Title: Assessing the effects of fluid resuscitation of hemorrhagic shock with or without tissue injury on inflammatory and apoptosis mediators in rat. 1392-1393.
16. Dr Khodaei, Surgeon Resident. Title: Comparison the effects of infusion of saline %0./9 v/s HES 6% on resuscitation of hemorrhagic shock with or without tissue injury in rats. 1392-1393.
17. Zahra Jafarinezhad, MSc student in Physiology. Title: Protective effects of Curcumin and Carvacrol on the doxorubicin-induced cardiotoxicity in rats: A Physiological and stereoligical study. 1395.

18. Nafiseh Mirzaei, Ph.D student in Physiology. Electrophysiological effects of interaction between ionotropic glutamate and GABAA receptors in the KÖlliker-Fuse nucleus on cardiovascular responses to the peripheral chemoreflex activation in anesthetized rat. 1395-1397.

Others

19. The effect of suture techniques on the outcome of tracheal reconstruction: An observational study and review of literature. 1401.

20. Mehrdad Vosooghi, Ph.D student in Statistic. Title: The performance of summary measure to test within subjects, between subject and interaction effects in repeated measures data. 1391.

21. Stereological estimation of the lung in the 2K1C and 1K1C hypertensive rats. 1394.