The fixed-dose combination BT0113 represents a new paradigm in the treatment of renal ischemia-reperfusion injuries that could simply be added to common preservation solutions. Mechanism of action studies for the identified pharmacological modulators of IR are underway, which will help to improve the current knowledge about the molecular and immunological consequences of BT0113 treatment on renal ischemia and reperfusion injuries.

CITATION INFORMATION: Thomas M, Tardif G, Melanger A, Berna P. Modulating Ischemia-Reperfusion Injuries with Pharmacological Agents: A Bench-to-Bedside Approach *Am J Transplant.* 2017;17 (suppl 3).

DISCLOSURES: *Thomas, M.*: Salary, Balmes Transplantation. *Tardif, G.*: Salary, Balmes Transplantation. *Melanger, A.*: Salary, Balmes Transplantation. *Berna, P.*: Ownership interest, Balmes Transplantation.

Abstract# A263

Effect of Bone Marrow Derived Mesenchymal Stem Cells on Renal Ischemia-Reperfusion Injury in Rabbit. J. Jang, H. Ri, I. Hong. *Agriculture & Life Science, Pyongyang University of Science & Technology, Pyongyang, Democratic Peoples Republic of Korea*.

Background: We succeeded to set up a rabbit model of Ischemia-Reperfusion (I/R) injury to test future candidate substance or plant extract that may have anti-oxidant action. To date many researchers reported that Mesenchymal Stem Cell (MSC) has immune modulating effect. We wanted to test the MSC's immune-modulating effect using our I/R injury model to elucidate their mechanism; if it is from anti-oxidant action of MSC or orchestrate effects from other factors. We also compared the efficacy between MSCs and vitamin E through our model (checked final gene production levels by PCR/RT-PCR)

Methods: 15 Rabbits are grouped three: Control, MSCs treated, and α-Tocopherol treated. Before these treatment all animals were stressed with I/R injuries. From the donor animal, we aspirate its Bone Marrow (BM), and purified and cultured. MSCs are defined with RT-PCR for the CD molecules. After treating as designed schedules, animals of each group were sacrificed to check kidneys for the gene products of TNF-α, VCAM, iNOS, HGF, VEGF and IL-10. Blood samples were serially drawn from each group for the test of creatinine (Cr) levels.

Results: 1) When BM-MSCs were injected to rabbits intravenously 24 hours before the I/R injury, right after I/R injury and 24 hours after the I/R injury with dose of 6 million cells, expression of inflammation- specific genes (TNF-α, VCAM and iNOS) were inhibited and expression of tissue regeneration- specific genes (HGF, VEGF and IL-10) were increased. **2)** BM-MSCs decreased average value of serum Cr level of 0.41 & 2.81 mg/dL after 24 & 48 hours, respectively. **3)** BM-MSCs had stronger anti-inflammatory & tissue regeneration effects than α-Tocopherol when vitamin E was orally administered to the rabbits 24 hours before the I/R injury, right after I/R injury and 24 hours after the I/R injury with dose of 268.5mg of α-tocopherol. **4)** BM-MSCs inhibited expression of inflammation- specific genes (TNF-α, VCAM and iNOS) more than vitamin E. **5)** BM-MSCs increased expression of tissue regeneration- specific genes (HGF, VEGF and IL-10) more than vitamin E. **6)** BM-MSCs decreased the average value of serum creatinine level 0.37mg/dL more than vitamin E after 48 hours of re-perfusion. **7)** Pathology of BM-MSCs treated group showed less severe than vitamin E and control group.

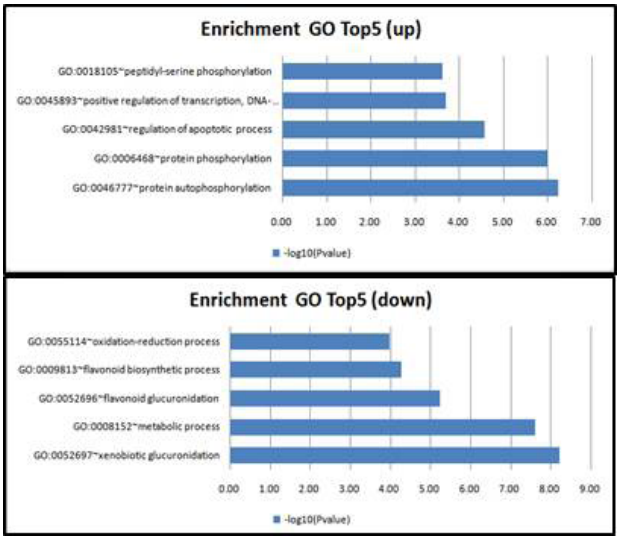
Conclusion: In I/R injury model, MSC was found to have their stronger anti-oxidant action than high dose of vitamin E, but they also have immune suppressive action.

CITATION INFORMATION: Jang J, Ri H, Hong I. Effect of Bone Marrow Derived Mesenchymal Stem Cells on Renal Ischemia-Reperfusion Injury in Rabbit *Am J Transplant.* 2017;17 (suppl 3).

Abstract# A264

A Study on Gene Expression of the Protective Effect of Nitric Oxide Releasing Nanofiber in Rat Renal Ischemia-Reperfusion Injury. H. Ahn,[1] S. Joo,[1] H. Ko,[1] K. Jung,[1] J. Shin.[2] *[1]Kyung Hee University, Seoul, Korea; [2]Kwanwoon University, Seoul, Korea*.

Objective: Renal ischemia-reperfusion injury (IRI) is very important issue in kidney transplantation. Nitric oxide (NO) was well known to be a protector of IRI. The aim of this study was to investigate the gene expression of the protective effect of the new delivery system of the NO releasing nanofiber on renal IRI in a rat models. Methods: Male Sprague-Dawley rats were divided into three groups: (1) sham group (SG, n=5); (2) control group, renal IRI without any treatment (CG, n=4); (3) NO group, the renal IRI with wrapping the liver using NO rapid releasing-polymer nanofiber matrix (NG, n=6). After Rt nephrectomy, NO releasing sheet was applied by wrapping Lt kidney one hour before clamp of renal artery. Renal ischemia was sustained during 55 minutes, followed by reperfusion. NO sheet was removed 24 hours. And 48 hours after surgery, the rats were sacrificed. We investigated the changes of gene expression between the groups with RNA Quant-Seq analysis. Results: Mean of creatinine in SG, CG and NG at 48 hours after operation were 0.48(±0.08), 4.67(±0.33) and 2.60(±1.0) respectively. There were significant differences between groups. (p=0.002) The top five terms of upregulated gene ontology (GO) among this study that the gene content of CG is more than two times than that of SG, and the gene content of NG is less than two times than that of CG were GO:0046777~protein autophosphorylation, GO:0006468~protein phosphorylation, GO:0042981~regulation of apoptotic process, GO:0045893~positive regulation of transcription, and GO:0018105~peptidyl-serine phosphorylation. The top five terms of downregulated GO were GO:0052697~xenobiotic glucuronidation, GO:0008152~metabolic process, GO:0052696~flavonoid glucuronidation, GO:0009813~flavonoid biosynthetic process, and GO:0055114~oxidation-reduction process.



Conclusion: NO nanofiber has the protective effect against rat renal IRI. This genetic bioinformation may present the understanding the mechanism of protective effect of NO.

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Abstract# A265

Using Scheduled Commercial Flights for Transport of Liver for Transplant. V. Gupta,[1] A. Chandra,[1] M. Singh,[1] V. Gupta,[1] S. Kumar,[1] P. Joshi,[1] P. Sharma,[2] H. Hasan,[3] P. Srivastava,[4] M. Khan,[1] Z. Arshad,[1] R. Kant.[1] *[1]King George's Medical University, Lucknow, Uttar Pradesh, India; [2]Uttar Pradesh Chief Minister Office, Lucknow, Uttar Pradesh, India; [3]Traffic Directorate, Lucknow, Uttar Pradesh, India; [4]Airport Director, Amausi Airport, Airports Authority of India, Lucknow, Uttar Pradesh, India*.

Transport of liver procured from a brain dead donor (BDD) to the receiving hospital by chartered private flight (PF) is a costly endeavour. Also the risk of fatality, while travelling with an organ on a PF is estimated to be 1000 times higher than a scheduled commercial flight (CF). Use of CF to transport liver can help to mitigate both the cost and risk associated with this process.

We are the largest trauma center of one of the most populous states of India. From October 2013 to October 2016 a total of 14 livers were procured from BDDs at our center. Three livers were transferred within the same city while 11 were sent to various transplant centers in the National Capital Region, about 300 miles away, using PF in one and CFs in 10 transfers.

A total of 18 CFs are available daily between our city and the National Capital Region. Appropriate Traffic police and airport authorities were intimated timely to help in the smooth transport of organs. The average total transport time from donor hospital departure to arrival at recipient hospital was 178 minutes (Range from 147 to 206 minutes). Total cold ischemia time ranged from 324 minutes to 561 minutes. There was no incidence of primary non function of the transplanted liver. Cost of CFs ranged from 30 USD to 200 USD as compared to cost of about 8000 USD for a PF. Use of CFs to transport a liver for purpose of transplant is feasible and safe. All livers were transplanted within the safe limits of cold ischemia time. Willingness of traffic and airport officials to cooperate in the transport of organs kept the road and airport transit times low. This is also very economical for most patients in developing countries like India, who cannot afford a PF.

CITATION INFORMATION: Gupta V, Chandra A, Singh M, Gupta V, Kumar S, Joshi P, Sharma P, Hasan H, Srivastava P, Khan M, Arshad Z, Kant R. Using Scheduled Commercial Flights for Transport of Liver for Transplant *Am J Transplant.* 2017;17 (suppl 3).