The 26th Annual University of Virginia Children's Hospital Research Symposium and Research Trainee Competition

CALL FOR ABSTRACTS

ABSTRACT DUE DATE – Friday April 11, 2014

Mark your Calendar! This year we will be celebrating our 26th Annual Research Symposium with research presentations, reception, awards ceremony, and featured speaker on

Thursday May 15.

The Second Annual **ResearchTrainee Competition** featuring Platform Presentations by fellows, residents and other trainees will be held on

Thursday April 24.

Note: The number of posters is limited (approximately 50) due to space. Posters will be accepted on a first come first serve basis.

Instructions for submitting abstracts are attached

Please contact Maria Luisa Sequeira Lopez (msl7u@virginia.edu) or Lisa Palmer (lap5w@virginia.edu) for more information.

26th Annual Children's Hospital Research Symposium
ABSTRACT SUBMISSION GUIDELINES
DUE DATE – Friday APRIL 11, 2014

Abstracts should focus on recent research that has not yet been published in manuscript form. Abstracts submitted for presentation at other scientific meetings within the last year are welcome, but should be updated to reflect the current status of your research. Please indicate if you would like your abstract to be considered for an oral presentation (oral presentations are reserved for trainees).
NOTE: Oral presentations will automatically be entered in the Research Trainee competition held Thursday April 24.

A brief summary of your research is required following your abstract. The summary should consist of 3 bullets titled: Objective, Conclusions and Implications for Children. See the attached abstract for an example.

Please acknowledge the sources of funding for your research beneath your abstract, **especially funding from the UVA Children's Hospital (e.g. grants in-Aid, the Scholar's Award, Career Enhancement Award).** Submit your abstract via email to Lisa Palmer at lap5w@virginia.edu.

Abstract Format guidelines:

- Abstracts should be sent via e-mail in Word using the format provided
- Margins: (top, bottom, left and right) should be one inch
- Font: Ariel 12 pt.
- Title in bold, followed by the Author(s) names, Department and Division
- Main body of abstracts to be followed by Summary consisting of
  - Objective
  - Conclusions
  - Implications for Children
- The abstract and summary are limited to one page.
- Acknowledge funding, especially grants awarded by the UVA Children's Hospital etc.
- Name the file as LAST NAME FIRST NAME SYM 2014. For example: "Palmer Joanne Sym 2014"
- Please indicate whether you a Resident, Fellow, Student or Faculty
- Use the attached sample as a template. Do NOT alter the order of the information. Email the abstract as an attachment to Lisa Palmer at lap5w@virginia.edu.

___ Oral Presentation (trainees only)

✓ Poster Presentation Fellow

Cardioprotection Following Long-term Cold Ischemic Preservation In Hearts Overexpressing A_1 Adenosine Receptors

Marguerite Crawford, Sara Regan, Anne Byford, Amy Lankford and Paul Matherne.
Department of Pediatrics, Division of Cardiology, University of Virginia, Charlottesville, Virginia.

Background: Approximately 1000 children with heart disease await cardiac transplant but the donor pool is small and limited by transport times from wide geographic areas. Currently, heart preservation is limited to 4-6 hours of cold ischemia, yet other solid organs can be preserved for 24-36 hours. By extending preservation time, the donor pool of hearts could be increased and allow time for better tissue matching, resulting in less immunosuppressive therapy. Previous studies show that overexpression of A_1 adenosine receptors in mouse hearts is protective during acute ischemia, but protection during long-term cold ischemia has not been investigated.
Objective: This study was designed to test the hypothesis that hearts overexpressing A_1 adenosine receptors will tolerate longer periods of cold ischemic preservation.
Design/Methods: Hearts from wild type (n=9) and transgenic (n=7) mice that overexpress myocardial A_1 adenosine receptors were perfused on a Langendorff isolated heart apparatus. Following 30min of stabilization, each heart was infused with 2ml of 5°C University of Wisconsin (UW) preservation solution. After 18hrs of cold ischemic storage at 5°C in UW solution, hearts were reperfused for 2hrs at 37°C. Left ventricular end diastolic pressure (EDP) was measured as an index of diastolic function. Left ventricular developed pressure (LVDP) was measured as an index of systolic function. Cell viability was assessed by determination of infarct size with TTC staining.
Results: Transgenic hearts showed greater preservation of function following 18hrs of cold ischemia and reperfusion, as shown by lower EDP (12 ± 3 vs. 25 ± 3 mmHg, $P<0.05$) and higher recovery of LVDP (66 ± 7 vs. 43 ± 7% of the baseline, $P<0.05$). Transgenic hearts also had markedly reduced infarct size when compared with wild-type hearts (30 ± 4 vs. 46 ± 4% $P<0.05$).
Conclusions: Overexpression of A_1 adenosine receptors imparts cardioprotection during long-term cold ischemic preservation. Further study of the mechanism of this protection may lead to improved and prolonged cardiac preservation.

Summary:

- **Objective:** This study examined whether hearts, from genetically altered mice with increased ADENOSINE receptors, can tolerate prolonged periods of ischemia (poor blood supply) that can damage hearts prior to transplantation. Adenosine is a chemical produced by the heart which can protect the heart during periods of poor perfusion.
- **Conclusion:** Hearts with increased numbers of Adenosine receptors can tolerate prolonged periods of cold ischemic.
- **Implications for Children:** Results from this study may enhance the success of heart transplantations for children (and adults) by defining mechanisms which can improve heart preservation prior to transplantation surgery.

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