# CERTIFICATE

This is to certify that

**CALOGERA PISANO**

contributed the paper and presentation

**HISTOLOGICAL AND GENETIC STUDY IN PATIENTS WITH BICUSPID AORTIC VALVE AND ASCENDING AROTA COMPLICATIONS**

as guest speaker in the

Ottawa 2012 International Symposium on Biochemistry & Biophysics

October 24-25 2012 Ottawa Canada

Dr. Tarhen Cusere

Executive Chairman, Organizing Committee of Ottawa 2012 International Symposium on Biochemistry & Biophysics Canada

# Ottawa 2012 International Symposium On Biochemistry & Biophysics

October 24–25, 2012 Ottawa, Canada

# PROGRAM & ABSTRACT BOOK

## PISANO CALOGERA

**Personal Information:**
Nationality: Italian

**Current Position:**
2008-Now: Trainee in Cardiac Surgery

**Professional experience:**
2008-Now: Unit of Cardiac Surgery Department Surgery and Oncology University of Palermo "P. Giaccone"
2006-2007: Department of Angiology University of Palermo Prof. G. Raimondi
2006-2007: Unit of Cardiac Surgery Department of Surgery and Oncology University of Palermo Prof. G. Ruvolo
2006-2007: Medical Doctor University of Palermo Palermo, Italy
2000-2001: Scientific License Menfi (AG), Italy

**Memberships:**
- Member of Italian Medical Society
- Member of Cardiothoracic Surgery Network
- Member of General Medical Council UK

**Operative Activity:**
- Assistant in most of cardiac surgical operation including all adult cardiac surgery (On pump and Off pump coronary arteries by pass grafting, valve replacement or repair, aortic root reconstruction or replacement, aortic dissection, cardiac tumors and congenital defect in adult patients).

**Research Field:**
- Aortic root reconstruction
- Mitral and Aortic valve repair
- Off-pump CABG
- Genetic and inflammatory in ascending aortic aneurysm
- Postoperative intensive care

# HISTOLOGICAL AND GENETIC STUDY IN PATIENTS WITH BICUSPID AORTIC VALVE AND ASCENDING AORTA COMPLICATIONS

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**OBJECTIVES**:Aneurysm diameter and growing rate does not represent a sure parameter for operation inpatients with bicuspid aortic valve, ascending aortic aneurysm and normal root. Thus, we investigatedhistological and immunohistochemical aspects of different segments of ascending aorta (precisely, aorticroot without dilatation, aneurysmatic tubular portion, dissected ascending aorta) and genetic features of patients with bicuspid aortic valve and ascending aorta complication (aneurysm or dissection).

**METHODS**: Aorta tissue samples of 24 bicuspid aortic valve patients were examined. The patients were 18men and 6 women, the average age was 54,2± 14,3 years. All patients underwent composite aortic root replacement (button Bentall operation). Multiple histological sections were prepared from each aortic specimen. The evaluated features included fragmentation of elastic fibers, cystic medial change, smooth muscle cell necrosis, medial fibrosis, and the markers of medial apoptosis and the metalloproteinases.Furthermore, genetic risk factors were also investigated.

**RESULTS**: Same medial degenerative lesions in tissue samples of different aorta segments (precisely of aortic root without dilatation, and aneurysmatic ascending aorta portion) were observed. Significant associationsbetween single nucleotide polymorphisms (-786T/C endothelial nitric oxide synthase enzyme, D/I angiotensin converting enzyme,-1562C/T metalloproteinase-9 and -735C/T metalloproteinase-2) andaneurysm risk were detected in bicuspid aortic valve patients than controls.

**CONCLUSIONS**: Based on our histological and genetic data, we underline that surgical approach in patients with bicuspid aortic valve, ascending aortic aneurysm and normal root should consider not only the diameter of the aneurysmatic aortic portion but also the histological features of the whole ascending aorta and the genetic risk profile.