Louis Samuels, J Clin Exp Cardiology 2014, 5:3
http://dx.doi.org/10.4172/2155-9880.S1.018

OMICS Group Conferences
Accelerating Scientific Discovery

4th International Conference on
Clinical & Experimental Cardiology
April 14-16, 2014 Hilton San Antonio Airport, TX, USA

Louis Samuels

Thomas Jefferson University School of Medicine, USA

Update on the total artificial heart: Progress since 1969

In 1969, two historic events took place that captured world headlines: the first manned lunar landing and the first successful clinical implantation of a Total Artificial Heart (TAH). These two technological breakthroughs changed the world forever- the former launching the Space Age into unprecedented territory and the latter paving the way for the realization that the human circulation can be replaced by a machine. Since 1969, there have been tremendous advancements in artificial heart technologies including the development of partial mechanical support devices-LVADs. And while the LVAD has evolved and enjoyed clinical application more so than the TAH, the quest for complete artificial heart replacement remains strong.

The purpose of this presentation is to review the progress made in TAH technology and to highlight the advancements in the past four and a half decades. The story can be described in peaks and valleys with major conquests and equally major disappointments. Yet, despite the setbacks that seem to occur every decade, refinements of original technology and introduction of new devices keeps heart failure specialists and others hope that a reliable TAH is not beyond reach. While the Jarvik-7™ transformed itself into the CardioWest™, a device that exceeds 1250 implants to date, the AbioCor™ debuted briefly in the new millennium and quickly faded after a dozen cases. On the horizon are promising technologies including the recently implanted Carmat™, a French TAH that was placed into a 75 year old man on December 18th, 2013.

Whether the TAH or the LVAD achieves supremacy remains to be seen. Until then, it is worthwhile to maintain both technologies and tailor their application according to the patient's needs.

Biography

Louis Samuels graduated Medical School from Hahnemann University (Philadelphia, PA) in 1987 and completed his Cardiothoracic Surgical training in 1995. He joined the faculty of Drexel University as the Surgical Director of Cardiac Transplantation. In 2001, Samuels and his team implanted the world's 5th totally implantable electric artificial heart (AbioCor™). In 2003, he joined the Main Line Health System as the Surgical Director of Heart Failure. In addition to cardiac transplantation and LVAD implantation, Samuels performs CABG and Aortic Valve surgery. In 2012, Samuels became Professor of Surgery at Thomas Jefferson University School of Medicine.

SamuelsL@mlhs.org