

بسم الله الرحمن الرحيم





شبكة المعلومات الجامعية التوثيق الالكتروني والميكرو فيلم



جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

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**Registry of Cardiac Patients Who Underwent
Cardiac Catheterization or Invasive Imaging
Procedures at New Children's Hospital
Ain Shams University**

Thesis

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Pediatrics*

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالَ

سُبْحَانَكَ لَا يُلْمُ لَنَا
إِلَّا مَا عَلِمْنَا إِنَّكَ أَنْتَ
الْعَلِيمُ الْعَظِيمُ

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List of Abbreviations

Abb.	Full term
AK.....	<i>Air Kerma</i>
ALS.....	<i>Advanced resuscitation certificate</i>
ARVA	<i>Alternative route of vascular access</i>
AS	<i>Aortic stenosis</i>
ASD	<i>Atrial septal defect</i>
ATICE.....	<i>Adaptation to the intensive care environment scale</i>
AV.....	<i>Arteriovenous</i>
BLS.....	<i>Basic resuscitation certificate</i>
BMI.....	<i>Body mass index</i>
C3PO	<i>Congenital Cardiac Catheterization Project on Outcomes</i>
CAVC	<i>Common Atrioventricular canal</i>
CHDs	<i>Congenital heart diseases</i>
COA	<i>Coarctation of aorta</i>
DAP	<i>Dose Area Product display</i>
DBP	<i>Diastolic Blood Pressure</i>
DE.....	<i>Device embolization</i>
ECMO.....	<i>Extracorporeal membrane oxygenation</i>
HAIs.....	<i>Hospital-associated infections</i>
HS.....	<i>Highly significant</i>
LVAD.....	<i>Left ventricular assist device</i>
MDRO.....	<i>Multi-drug-resistant bacteria</i>
ml.....	<i>Milliliters</i>
MR	<i>Mitral regurge</i>
NCDR	<i>National Cardiovascular Data Registry</i>
NIS	<i>Nationwide Inpatient Sample</i>
NS.....	<i>Non significant</i>
PBMR.....	<i>Paper-based Medical Records</i>

List of Abbreviations (Cont...)

Abb.	Full term
<i>PDA</i>	<i>Patent ductus arteriosus</i>
<i>PHTN</i>	<i>Pulmonary Hypertension</i>
<i>PS</i>	<i>Pulmonary stenosis</i>
<i>PVL</i>	<i>Prosthetic valve regurgitation</i>
<i>RASS</i>	<i>Ramsay sedation scale the Richmond agitation sedation scale</i>
<i>RVOT</i>	<i>Right ventricular outflow tract</i>
<i>S</i>	<i>Significant</i>
<i>SBP</i>	<i>Systolic Blood Pressure</i>
<i>SHD</i>	<i>Structural heart disease</i>
<i>SPO2</i>	<i>O2 Saturation</i>
<i>TEE</i>	<i>Tranesophageal Echocardiography</i>
<i>TGA</i>	<i>Transposition of great arteries</i>
<i>TOF</i>	<i>Tetralogy of fallot</i>
<i>VCD</i>	<i>Vascular closure device</i>

ABSTRACT

Registry of Cardiac Patients Who Underwent Cardiac Catheterization or Invasive Imaging Procedures at New children's Hospital

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Background: Cardiac catheterization is one of the most widely performed cardiac procedures. Medical record completeness and registry is a key performance indicator that is related with delivery of healthcare services in the hospital. At hospital level, statistics derived from the daily bed census and medical records are used to assess the utilization of services and enable the hospital to make appropriate financial and administrative plans and to conduct vital research.

Aim of the Work: To do statistical analysis of patients data who underwent cardiac catheterization to evaluate the current status, the prospects of improvements and future developments.

Patients and Methods: This cross sectional study included review of files of 389 patients who underwent cardiac catheterizations or invasive cardiac imaging procedures for diagnosis or treatment of various congenital heart diseases at the cardiac catheterization unit, new children's hospital, Ain Shams University during the period from first of January 2018 to the end of December 2019.

Results: In our study, interventional catheterization represented 191 (49.1%) of all studied cases whereas diagnostic catheterization were 115 (29.6%). The majority of procedures were done under general anesthesia and 8 cases (2.1%) only were done under sedation. The most frequent interventional procedure done was PDA device closure (28.30%). Among our study group, the number of complicated procedures was 23 procedures representing a percentage of 5.9 % with desaturation being the most common complication (26.1%) which encountered during balloon valvuloplasty operations. Mortality was recorded in only 2 patients (0.5%). Success rate of overall procedures was 99%.

Conclusion: The outcomes of the procedures done in our relatively new center were satisfactory and approximated to results of other international pediatric cardiac catheterizations centers as regards complications, mortality and success rate. Neonatal interventions were limited. Complications were higher among interventional procedures with desaturation being the most common complication which developed frequently during balloon pulmonary valvuloplasty followed by supraventricular tachycardia and arrhythmia; judicious catheter manipulation and correction of any metabolic abnormality is critical, but being prepared for such events is vital.

Keywords: Congenital heart diseases, Cardiac catheterization ,Medical registry

INTRODUCTION

Congenital heart diseases (CHDs) occur in nearly 1% of live births. Being six times more common than chromosomal abnormalities and four times more common than neural tube defects. The incidence of CHD with intrauterine diagnosis ranges from 2.4% to 54%. Some countries have high incidence of CHD because they have instituted an organized policy to perform heart screening by ultrasound systematically. Although several risk factors for CHDs have been identified, such as family history, exposure to teratogenic medications, lack of prenatal vitamin and folic acid use, parenteral CHDs and pregestational diabetes, the causes of the majority of CHDs remain unexplained (*Midan et al., 2016*).

The term cardiac catheterization can be used to refer to either right heart catheterization or left heart catheterization or both. The procedure can be either diagnostic or therapeutic.

Cardiac catheterization is one of the most widely performed cardiac procedures. In the United States, more than 1,000,000 cardiac catheterization procedures are performed annually (*Mozaffarian et al., 2016*).

As expected, in any invasive procedure, there are some patient related and procedure-related complications. With significant advances in the equipment used for catheterization, the improved skill of the operators, and newer techniques, the rates of these complications have been reduced significantly (*Manda et al., 2018*).