

Management of Pregnancy and Labor in Cardiac Patients

Systematic review

*Submitted for Partial Fulfillment of Master Degree
In Obstetrics and Gynecology*

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List of Abbreviations

ACC	American College of Cardiology Foundation
ACE	Angiotensin converting enzyme
AF	Atrial fibrillation
AHA	American heart association
AR	Aortic regurge
AS	Aortic stenosis
ASD	Atrial septal defect
ATD	Anti thyroid drug
AYR	Aortic valve replacement
CHF	Congestive heart failure
CI	Confidence interval
CNS	Central nervous system
CO	Cardiac Output
CV	Curriculum vitae
CoA	Aortic coarctation
DVT	Deep venous thrombosis
KCG	Electrocardiogram
EF	Ejection fraction
GA	Gestationai age
I1CM	Hypertrophic cardiomyopamy
IGUR	Intrauterine growth retardation
INR	International nonnalized ratio

List of Abbreviations (cont.)

1Q :	Intelligence quotient
IV:	Intra-venous administration
IVC:	Inferior vena cava
JAMA:	Journal of the American Medical Association
LiDCO	Lithium indicator dilution cardiac output
LV	Left ventricle
LVHF	Left ventricular ejection fraction
MeSH	Medical Subject Heading
MI	Miltal insufficiency
MI	Myocardial infarction
MMI	Methimazole
MR	Mitral rcgurge
MS	Mitral stenosis
MVA	Mitral valve area
MIVR	Mitral valve replacement
MVP	Mitral vaive prolapsed
NHS	National Health Services
NY1IA	New York Heart Association
PDA	Patent ductus arteriosus
PO	Oral administration

List of Abbreviations (cont.)

PS	Pulmonary stenosis
PTU	Propylthiouracil
RCTS	Randomized Controlled Trials
RV	Right ventricle
SI	First heart sound.
S3	Third heart sound.
SBP	Systolic blood pressure
SCHARR	The school of health and related research
STEMI	ST-elevation myocardial infarction
SV	Stroke volume
TA	Thoracic aneurysm
SVR	Systemic vascular resistance.
TAA	Thoracic aortic aneurism
TGA	Transposition of the great arteries
TPA	Tissue plasminogen activator
TOK	Tetralogy of fallot
VSD	Ventricular septal defect
VT	Ventricular tachycardia
U	Units
US	United States

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Protocol of a Systematic review

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Introduction

Heart diseases during pregnancy is the leading indirect cause of maternal death all over the world (**Tan 2004**).

In Egypt, 16% of maternal deaths are due to heart diseases with pregnancy. This percentage means that heart diseases with pregnancy is the fourth most common cause of maternal mortality following hemorrhage, sepsis, and hypertensive diseases. (**Egyptian Ministry of Health and Population 2005**).

In developed countries, where the incidence of post-partum hemorrhage is low, heart diseases during pregnancy and labor are the leading cause of maternal mortality (**Naidoo et al., 2002**).

In the UK, maternal deaths from heart diseases accounted for 16.5% of all maternal deaths over the period 1997-99, and was equaled only by the number of deaths due to thrombo-embolism (**Ray et al., 2004**).

In South Africa, the National Committee on Confidential Enquiries of Maternal Deaths (NCCEDMD) reported that close to half of non-obstetric maternal deaths were due to cardiac diseases (**Berlinerblau et al., 2002**).

The increased risk of neonatal complications in pregnant women with heart diseases is amplified by the presence of obstetric risk factors (**Tan 2004**).

Women with heart diseases who are aged <20 or >35 years or who exhibit maternal obstetric or cardiac risk factors require increased intensity of ante-partum surveillance (**Samuel et al., 2002**).

Labor and delivery are associated with significant hemodynamic changes, as well as pain and anxiety, all of which could be a fertile ground for cardiac complications (***Berlinerblau et al., 2002***).

There are no clear cut clinical practice guidelines for the obstetrical management of cardiac diseases with pregnancy. This generated the need for a systemic review to resolve questions about:

- The most suitable management for delivery of cardiac pregnant patients.
- The problems with cesarean sections compared with normal delivery.
- The incidence, the severity of associated morbidity and mortality of the mother.
- Also the morbidity and mortality in the neonate after normal vaginal delivery and cesarean section, comparison with each other's

Aim of the work

The purpose of this review is to evaluate the clinical features of maternal cardiac diseases that should be recognized by the obstetrician, and address recent advances in the management of these patients, and to consider the management of pregnant women known to have cardiac disease before delivery; in order to develop clear policies, guidelines and procedures for the management of maternal

cardiac diseases during pregnancy and childbirth to get a good outcome.

Methods: (*Moher et al., 2007*)

The objective will be fulfilled through the following strategic steps:

1. Developing research questions that will provide keywords that will be used to disclose the available literature.
2. Searching for the related literature through multiple search engines and data-bases using the research question keywords.

Articles will initially be retained after reading their title and abstract. The full papers will then be obtained and read. . .

Articles not relevant to the subject in question will be rejected, as will articles where the specific outcomes sought in this study are not reported.

For all questions, any published systematic reviews or meta-analysis will be used. If these did not exist randomized controlled trials will be obtained. If there were no published randomized controlled trials or they were not appropriate for a particular research question, then other appropriate experimental studies will be sought.

3. Synthesizing and appraising the relevance and validity of the pertinent literature related to the topic.

Identified articles will be assessed methodologically and the best evidence will be used to form and support the recommendations.

If a question could be answered by a good systemic review, meta-analysis or randomized controlled trial, then studies of weaker design will be reported but not considered in the recommendations.

The evidence will be synthesized qualitatively. This will involve summarizing the content of identified papers into brief statements that accurately reflected the relevant evidence.

4. Determining the level of evidence that can be obtained from these studies:

- i. Evidence obtained from systemic review or meta-analysis of randomized controlled trials.
- ii. Evidence obtained from at least one randomized controlled trial.
- iii. Evidence obtained from at least one well-designed controlled study without randomization.
- iv. Evidence obtained from at least one other type of well-designed quasi-experimental study.
- v. Evidence obtained from well-designed non-experimental descriptive studies, such as comparative studies, correlation studies and case studies.

- vi. Evidence obtained from expert committee reports or opinions and/or clinical experience of respected authorities.
5. Developing evidence based recommendations to be used by clinical and future researchers.