



# ULTRASONOGRAPHIC MEASUREMENT OF MEDIASTINAL SHIFT ANGLE FOR THE PREDICTION OF POSTNATAL SURVIVAL IN FETUSES WITH ISOLATED LEFT CONGENITAL DIAPHRAGMATIC HERNIA



Principal Investigator: Jacel P. Rosales, MD, FPOGS

Supervising Investigator: Maria Estrella Y. Flores, MD, FPOGS, FPSMFM

Philippine Children's Medical Center Section of Perinatology

## BACKGROUND

Congenital Diaphragmatic Hernia (CDH) is associated with high postnatal mortality rate of about 50-65%. At present, the most widely used ultrasound parameters for the antenatal prediction of survival in fetuses with CDH are the lung area-to-head ratio (LHR) and the observed-to-expected LHR (O/E LHR). Mediastinal shift angle (MSA) is a novel ultrasonographic parameter proposed for the prediction of postnatal survival in fetuses with CDH.

## OBJECTIVES

This study aims to determine if ultrasonographic measurement of mediastinal shift angle can predict postnatal survival in fetuses with isolated left CDH.

## METHODOLOGY

A retrospective cross-sectional study was done involving 16 cases with prenatally diagnosed isolated left CDH and 60 controls with normal fetuses. For all fetuses, MSA was determined by two operators independently. The predictive value of MSA towards survival was determined.

## RESULTS

The cases with prenatally diagnosed isolated left CDH were allocated into two groups: Group A (survivors) and Group B (non-survivors). The mean MSA for the control group was 17.18°. Among CDH cases, the mean MSA was 33.04° for the survivors and 37.57° for the non-survivors. Analysis showed that MSA significantly predicts the probability of neonatal survival status (OR=2.17,  $p=0.021$ ).

## CONCLUSIONS AND RECOMMENDATIONS

Ultrasonographic measurement of mediastinal shift angle significantly predicts postnatal survival in fetuses with isolated left CDH. Prospective real time studies involving a larger sample size is recommended to further evaluate the ability of MSA in predicting postnatal survival and its correlation with neonatal oxygenation index.

**Keywords:** Congenital diaphragmatic hernia, MSA, LHR, oxygenation index