

## GESTATIONAL VARIATION IN THE BIOCHEMICAL COMPOSITION OF ALLANTOIC FLUID AND METERNAL BLOOD SERUM IN LOCAL IRAQI GOATS

Talib Musa Al-Hamedawi, Salah Mahdi AL-Shammary<sup>1</sup> and Ahmed Hadi Mohamod-Jawad Al-Mahdawi<sup>2</sup>

<sup>1</sup>Department of Surgery and Obstetrics, College of Veterinary Medicine, University of Baghdad, Baghdad, Iraq.

<sup>2</sup>Technical Institute of AL-Mussaib, Babylone Province, Iraq.

(Received 26 September 2019, Revised 9 January 2020, Accepted 18 January 2020)

**ABSTRACT :** Biochemical studies of the allantoic fluid are important inconsiderate fetal metabolism and possible pathologic condition, which may occur through gestation. This study was conducted on 49 pregnant uteri were collected from 49 slaughter pregnant local Iraqi goat in the Al-Shula abattoirs, Baghdad province. This study performed from Dec. 2018 to Apr. 2019, their ages vary from 3 to 5 years. Before and after slaughter, animals examined and appear free from malformations. We conducted a study on allantoic fluid collected from uteri of Gaddi goats at different stages of gestation. They took blood samples from the jugular vein before slaughter and kept in a test tube, we isolated serum after 24 hours from blood collection in -5°C to decide the metabolites by using kits in a spectrophotometer. The mean concentration of total protein, urea and creatinin increased and recorded significant differences ( $p < 0.05$ ) in late stages of gestation in allantoic fluid & maternal blood serum. However, they recorded the significant glucose differences ( $p < 0.05$ ) in early pregnancy in allantoic fluid & late pregnancy in maternal blood serum. The levels of calcium, potassium and phosphorus recorded significant differences ( $p < 0.05$ ) in late stages of gestation in allantoic fluid and recorded significant differences ( $p < 0.05$ ) in early stages of gestation in maternal blood serum. The outcomes recorded significant differences ( $p < 0.05$  and  $p < 0.01$ ) in all metabolites concentration of maternal serum compared with allantoic fluid in all stages of pregnancy. The aim of this study was to determine the concentration of some metabolites and ions in maternal blood serum and allantoic fluid in relation to gestation stages in goats.

**Key words :** Biochemical, allantoic fluid, serum, Iraqi goat.

### INTRODUCTION

“Evaluation biochemical profile of allantoic fluid is essential to understanding general wellbeing, fetal metabolism and possible pathologic condition in different stages of gestation (Prestes *et al*, 2001; Underwood *et al*, 2005)”. The study of biochemical in maternal serum and fetal fluids is important for pregnancy diagnosis and the condition of a growing fetus.” Blood biochemical evaluation plays an important role in the diagnosis of disease. “Diagnosis of physiological and pathological conditions in goats. Allantoic fluids is influenced by physiologic activities and the metabolic products of the foetus such as fluid coming through the urachus, secretions from the urethra, lung and salivary glands, foetal swallowing and permeability of the membranes (Khadjeh *et al*, 2007; Banan Khojasteh *et al*, 2011).” During the advanced age of gestation total protein, glucose, urea and Creatinin in allantoic and maternal serum changes (Mufti *et al*, 2000). “Feto-placental unit exchange of fluids components and water between

circulation of dam and fetal fluid, which is limited changes in chemical, physical and biochemical composition of fetal fluid (Faichney *et al*, 2004 and Khatun *et al*, 2011).” Recent studies reported that the fetal fluid and maternal serum is a tool for the state of a growing fetus and pregnancy diagnosis (Tabatabaei, 2012).

### MATERIALS AND METHODS

This study was conducted on 49 gravid uteri of a native goat from first to fifth months of gestation were collected randomly from 49 slaughter pregnant local Iraqi goat in the Al-Shula abattoirs, Baghdad province. This study performed from Dec 2018 to Apr 2019, their ages range from 3 to 5 years. Before and after slaughter, animals examined and appear free from malformations. They conducted a study on allantoic fluid collected from uteri of Gaddi goats at different stages of gestation. Allantoic sacs were punctured and they aspirated 10 ml of allantoic fluids from each allantoic sac by using a 10-ml disposable syringe. They stored the aspirated fluids in labeled plastic tubes and frozen at -18°C until biochemical