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The efficacy of dexamethasone on the duration of latent phase during induction of labour: Randomized controlled trial

A Thesis

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By

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Ahmed Mohsen Mohamed Attia

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List of Abbreviations

Abbr.	Full-term
11P-HSD1	1ip-hydroxysteroid dehydrogenase
AC	Abdominal circumference
ACOG	American Congress of Obstetricians and Gynecologists
ACTH	Adrenocorticotropic hormone
ADD	Actual date of delivery
AFI	Amniotic fluid index
AGA	Average for gestational age
AP	Activating protein
AR	Androgen receptor
ARM	Artificial rupture of membrane
BMI	Body mass index
BP	Blood pressure
BPM	Beats per minute
BPP	Biophysical profile
CL	Cervical length
COX	Cyclooxygenase
CRH	Corticotrophin releasing hormone
CRH-BP	CRH-binding protein
CRH-R	CRH receptors
CS	Cesarean section
CSF	Colony stimulating factor
CST	Contraction stress test
CTG	Cardiotocography
CYP17	Cytochrome P450, 17alpha-hydroxylase/17, 20-lyse
DCs	Dendritic cells
DHEA-S	Dehydroepiandrosterone sulfate
DZ/TZ	Definitive/transitional zone
EASI	Extra-amniotic saline infusion
EFW	Estimated fetal weight
FDA	Food and Drug Administration
FGR	Fetal growth restriction
FH	Fundal height
FHR	Fetal heart rate
GBS	Group B streptococci
GCs	Glucocorticoids
GR	Glucocorticoid receptor
GRE	Glucocorticoid responsive elements
H.S.	Highly significant
HFA	Human fetal adrenal
HPA	*Hypothalamic pituitary adrenal*

HSD3B2	*3-hydroxysteroid dehydrogenase type ^*
IL	*Interleukin*
IOL	*Induction of labor*
IUFD	*Intrauterine fetal demise*
IUGR	*Intrauterine growth restriction*
LMP	*Last menstrual period*
MAS	*Meconium aspiration syndrome*
m-RNA	*Messenger-RNA*
MSL	*Meconium stained liquor*
N.S.	*Non-significant*
NICE	*National institute for health and care excellence*
NICU	*Neonatal intensive care unite*
NK T cells	*Natural killer T cells*
NO	*Nitric oxide*
NST	*Non-stress test*
PE	*Pre-eclamsia*
PGDH	*Prostaglandin dehydrogenase*
PGs	*Prostaglandins*
PIH	*Pregnancy induced hypertension*
PPH	*Postpartum hemorrhage*
PPROM	*Preterm pre-labor rupture of membrane*
PR	*Progesterone receptor*
PROM	*Pre-labor rupture of membrane*
RCOG	*Royal College of Obstetricians and Gynecologists*
RCTs	*Randomized controlled trials*
RDS	*Respiratory distress syndrome*
RLN	*Relaxin*
SD	*Standard deviation*
SGA	*Small for gestational age*
SP-A	*Surfactant Protein-A*
SVD	*Spontaneous vaginal delivery*
TNF	*Tumor necrosis factor*
TVU	*Trans-vaginal ultrasound*
US	*Ultrasonographic*
WHO	*World health organization*
P-AR	*P-adrenergic receptor microgram*

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Abstract

Background: Induction of labor is one of the most common interventions practiced in modern obstetrics. In the developed World, the ability to induce labor has contributed to the reduction in maternal and perinatal mortality and morbidity. **Aim of the Work:** To establish whether the efficacy of dexamethasone on accelerating the duration of latent phase during induction of labour. **Patients and Methods:** After taking approval of ethical committee in Ain Shams Maternity Hospital, and a verbal consent was obtained from each candidate after explanation of the procedure in details, this randomized controlled trial was conducted on 120 pregnant women whom are admitted for labor induction at Ain Shams University Maternity Hospital. The participants were randomly assigned by computer list into Group I (Dexamethasone group) N=60 and Group II (Control group) N=60. Group I: in which participants received a prefilled syringe with two milliliters (8mg) of dexamethasone intra-muscular (two doses; with interval 12 hours), and the participants of Group II: in which all participants didn't receive dexamethasone or any other cervical ripening agent. **Results:** The mean values for induction-to-active phase and total duration of labor were significantly lower among women of group I when compared to women of group II [MD (95% CI) -0.68 hours (-0.98 to -0.37), $p<0.001$ and -0.79 hours (-1.18 to -0.41), $p<0.001$]. **Conclusion:** Double dose of intra-muscular injection of two ml. (8mg.) of dexamethasone with intervals of 12 hours between the two doses before induction of labour appears to shorten labor duration.

Key words: dexamethasone, duration of latent phase, induction of labour