



## **RISK FACTORS OF BIRTH TRAUMA TO THE FETUS DURING VAGINAL & CS DELIVERY**

**Rehab Ajeel Najeeb**

M.B.Ch.B.-D.G.O.

Iraqi Ministry of Health and Environment-Thi Qar Health Office, Al-Rifai Hospital, Thi-Qar, Iraq.

[dr.rehabajeel@gmail.com](mailto:dr.rehabajeel@gmail.com)

**Yusra Abbod Mahdi**

M.B.Ch.B.-D.G.O.

Iraqi Ministry of Health and Environment-Baghdad Al-Russafa Health Directorate, Ibn Al Baladi Hospital for Children and Women, Baghdad, Iraq.

**Alaa Khudhiar Alzaidi**

M.B.Ch.B.-C.A.B.O.G.

Iraqi Ministry of Health and Environment-Thi Qar Health Office, Habbobi Teaching Hospital for Obstetrics &

Gynecology, Thi-Qar, Iraq.

[loolamd@gmail.com](mailto:loolamd@gmail.com)

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<p><b>Received:</b> August 28<sup>h</sup> 2021 <b>Accepted:</b> September 30<sup>th</sup> 2021 <b>Published:</b> November 5<sup>th</sup> 2021</p>	<p>One hundred patients were collected from Al-Rifai Hospital and Habbobi Teaching Hospital for Obstetrics &amp; Gynecology, Thi-Qar, Iraq, and Ibn Al Baladi Hospital for Children and Women, Baghdad, Iraq. With vaginal and cesarean deliveries, and the risks to newborns were measured. Labor, course of delivery-variants of the mother (cesarean section or vaginal), and through the statistical analysis program, the age of the patients was identified <math>32 \pm 4.2</math>, which indicates the actual value and standard regression, and several conclusions were found, including few injuries after birth. Immediately or no symptoms appear after a short time. The child can be diagnosed with torticollis, head asymmetry, a congenital anomaly in the early stages. People with cerebral palsy (CP) result from the most severe congenital injuries, and most damage does not appear immediately after the baby is born and only appears over time. Moreover, birth injury sometimes requires a sufficiently long period to reveal itself. Time bombs include neuropsychiatric disorders (central nervous system (CNS) and peripheral nervous system disorders) -developmental delays, various conditions of the autism spectrum, convulsive syndromes.</p>

**Keywords:** Trauma, CS delivery, vaginal delivery, Newborns.

### **INTRODUCTION**

Reports defined that birth trauma is a weakness in the body of the newborn during the birth process, and this includes a group of injuries, whether major or minor injuries and this is due to several reasons, including the mechanical forces that occur during labor or the birth process [1,2]. Birth trauma as a result of disease caused by mechanical damage,

It does not include so-called "birth asphyxia," "biochemical birth trauma," or any hemorrhage [3]. Damage to the central nervous system as a result of intrauterine asphyxia is a different disease and a different subject, although many "hypoxic-ischemic encephalopathy" It is the result of cerebral circulatory disorders due to the influence of mechanical factors in childbirth [4,5]; We agree with the interpretations of birth trauma, in which virtually no damage to the fetus during childbirth and at the same time, the boundary

between asphyxia and childbirth is blurred injury, and also does not take into account the possibility of the action of other harmful factors, for example, infectious or toxic [6,7,8].

Attention is paid to cranial trauma as approached from a rigorous scientific point of view And taking into account the fact that any disease is damage and, at the same time, the body's reaction to this damage, birth trauma of the skull can be defined as follows Birth trauma of the skull is a systemic reaction of the fetus and newborn to brain damage caused by mechanical forces as a result of a violation of the compensatory and adaptive capabilities of the fetus during childbirth, Accompanied by maladaptation after childbirth. [9,15].

The most common injuries are clavicle fracture, humeral and facial paresthesia, head tumors, and trauma/injuries to the newborn's head, face, and arm.



This study aimed to determine the incidence of birth trauma and its associated risk factors.

Whining can be a marker of a more perinatal severe nervous system and further lead to the child's impaired physical health and intellectual development [11, 12].

The leading cause of birth injuries is a combination of mechanical, complex metabolic, and microcirculatory disorders in the ante-and intranatal periods [13,14]. Some authors point to a specific rule in the development of hereditary coagulopathy by cephalohematoma, intrauterine infections. However, the issues of early neonatal complications in newborns with cephalohematoma have not yet been sufficiently studied.

A pathological change in the integrity of the body that occurs directly during childbirth is called birth trauma, and these include:

1. Fractures and dislocations.
2. brain injury;
3. Central and peripheral nervous system damage.
4. hematoma spots
5. hemorrhage;
6. damage to internal organs;
7. Birth swelling of the head and other areas of the body;
8. Trauma to the chest, sacrum area.
9. Latent disorders of the nervous field with long-term consequences.

And if with obvious injuries it is more or less obvious, then the last type of injury will remain unnoticed, and the new inhabitant of the planet is considered healthy, and childbirth is safe. According to statistics, about 10% of newborns are affected. This share is much higher. The concept of "birth injury" is absent in the medical classification, so we are talking

only about its manifestations, many of which are erased or unrelated to childbirth.

### CLINICAL SIGNIFICANCE

The severity of the injury controls the type of management required and the clinical prognosis that occurs, as it can be in several locations, including trauma to the head or neck, and it may contain other places. Still, it is less common, namely in the face, abdomen and lower extremities.

### MATERIAL AND METHOD

One hundred patients were collected from Al-Rifai Hospital and Habbobi Teaching Hospital for Obstetrics & Gynecology, Thi-Qar, Iraq, and Ibn Al Baladi Hospital for Children and Women, Baghdad, Iraq.

With vaginal and cesarean deliveries, and the risks to newborns were measured. Labor, course of delivery-variants of the mother (cesarean section or vaginal), the presence of meconium, episiotomy (mid-right and middle left); Newborns: birth weight (grams); sex; size (cm); head circumference (cm); chest circumference (cm); Element:

The first and fifth minutes of fetal blood gas Apgar's (pH and excess basal) obtained from the umbilical artery and the weight of the fetus.

Where the quality of the trauma suffered by the newly born child was analyzed and based on the statistical analysis program SPSS SOFT 25 to read the samples and analyze the result of the arithmetic mean in addition to extracting the actual values to the results without neglecting the logistic slope and knowing the effect of the trauma on the child by relying on the quality of the mean values, which were found by knowing the type of logistic regression obtained.

## RESULT

Table 1- characteristics of patients.

P	k
Age (years)mean ±SD	32±4.2
Length cm mean ±SD	151±5.5
<b>birth method</b>	
vaginal delivery (N)	<b>70</b>

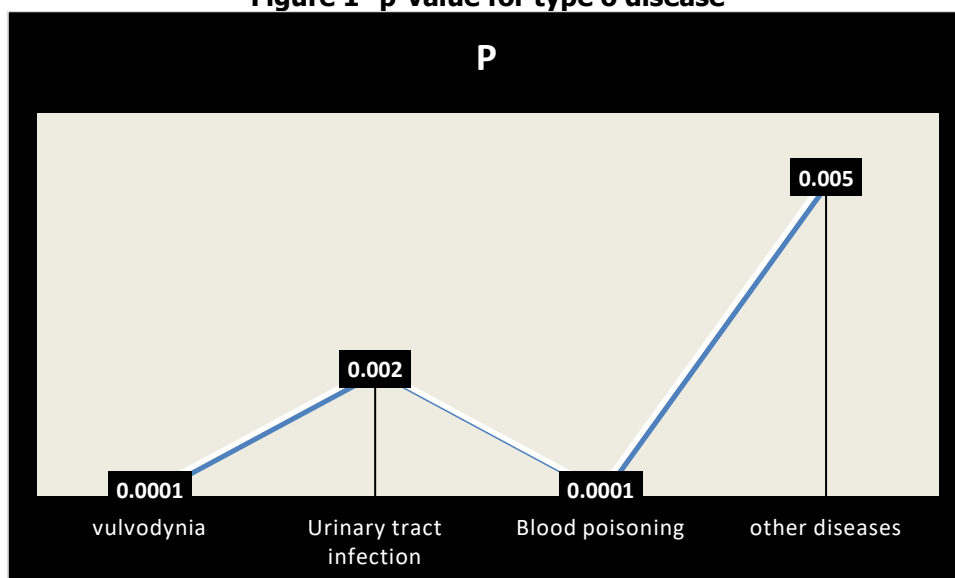


CS delivery(N)	<b>30</b>
pelvic width (N)	<b>14</b>
severe preeclampsia(N)	<b>12</b>

**Table 2- the study of the type of disease present.**

TYPE	<i>N</i>
vulvodynia	<b>24</b>
Urinary tract infection	<b>33</b>
Blood poisoning	<b>18</b>
other diseases	<b>25</b>

**Figure 1- p-value for type o disease**

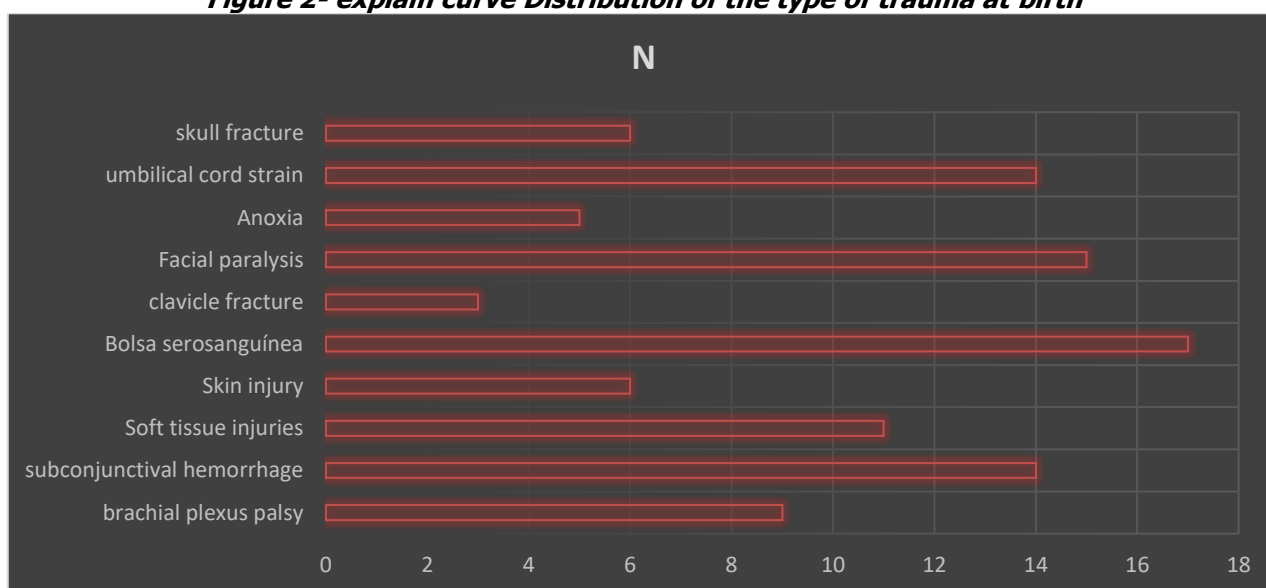




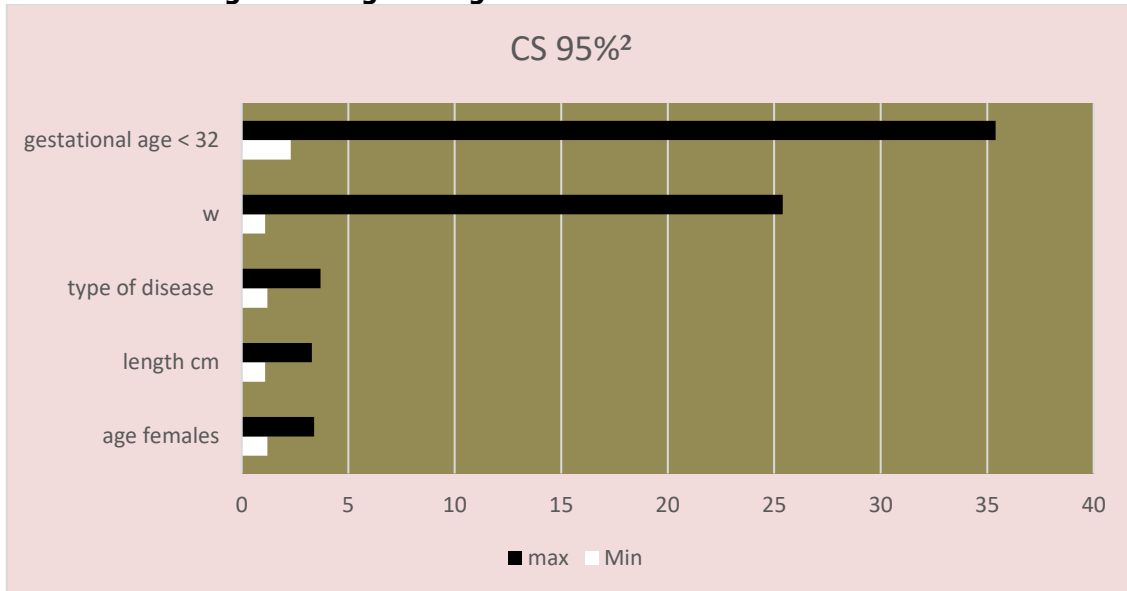
**Table 3 - Distribution of the type of trauma at birth**

	type	N
1.	brachial plexus palsy	9
2.	subconjunctival hemorrhage	14
3.	Soft tissue injuries	11
4.	Skin injury	6
5.	Bolsa serosanguínea	17
6.	clavicle fracture	3
7.	Facial paralysis	15
8.	Anoxia	5
9.	umbilical cord strain	14
10.	skull fracture	6

**Figure 2- explain curve Distribution of the type of trauma at birth**



**Figure 3- Logistic regression of female variables ic95%**



## DISCUSSION

One hundred patients were collected from Karkh Hospital and divided into vaginal delivery (70) and CS delivery (30). The risks to the fetus were classified, and the type of diseases present about the mother was identified. The highest percentage was found, estimated at 33 cases of urinary tract infection with a value of 0.002. Therefore, the P-value for the size of the probability that the difference measured in the experiment is due to factors related to chance, any probability value less than 0.05 means that less than 5% of the results of the investigation are due to chance

Traumatic brain injury is the most common birth injury and is usually minor, but serious injuries sometimes occur. Head reshaping is common in vaginal deliveries due to pressure exerted by the contracting uterus on the infant's skull passing through the birth canal. This change is average and not a sign of injury. This does not require treatment in addition to bleeding under the roots between the suprarenal aponeurosis and the periosteum. This occurs due to a more severe injury and is characterized by fluctuating swelling of the entire scalp, including the temporal regions, and appears in the first few hours after birth. This potential space under the scalp is ample, and you could experience significant blood loss and hemorrhagic shock, which may require a blood transfusion.

Soft tissue injuries were found in several 11 where soft tissue injuries occurred due to lateral neck swelling associated with shoulder dystocia during fetal retrieval in breech presentation or neck hyperextension in cephalic presentation. Injuries can occur due to a superficial aneurysm, intramural hemorrhage, rupture

of the nerve or root, or root extraction with concomitant cervical spinal cord damage. Compound injuries (e.g., fractures of the clavicle or humerus or subluxation of the shoulder or cervical spine) may occur. Intrauterine contraction can also cause some accidents, and the damage can be attributed to

- Superior brachial plexus (C5-C7): affects the muscles around the elbow and shoulder joints
- Inferior plexus (C8 T1): It mainly affects the muscles of the forearm and hand Complete brachial plexus: mainly affects the entire upper limb and T1 sympathetic fibers
- Erb's palsy is the most common injury to the brachial plexus. This injury to the superior brachial plexus (C5-C7) causes adduction and internal rotation of the shoulder with pronation of the forearm. Sometimes the biceps reflex is absent, and the Moro reflex is asymmetric. Hydro nephrosis caused by damage to the phrenic nerve is also common.

Erb's palsy is usually treated with physical therapy and defensive posture, including protection from excessive shoulder motion by stabilizing the arm to the upper abdomen.

Its consequences depend on the severity of the injury and the part of the body affected. During childbirth, the baby especially suffers from a significant load on the occipital bone and cervical spine. Even in natural childbirth, the damage is done due to the effect of beginning by the obstetrician. Also, birth injuries occur during prolonged or rapid delivery, umbilical cord entanglement, water shortage, and cesarean delivery.



Several problems also arise in neuroscience. Since the incision itself is small, obstetricians must distort the image of the baby. Displacement may occur in the cervical region, and the second point is associated with a sharp decrease in pressure during the transition from the liquid space to the air space. As a result, the baby does not unite the bones of the skull, and the bones of the head are compressed more than during normal birth.

### CONCLUSION

Injuries sustained by the child during Birth During childbirth, the child can be exposed to intracranial damage, damage to the spinal cord, peripheral nervous system, systemic Musculoskeletal, and internal tissues and organs. In a child's medical record, birth trauma can be recorded under Names, a variety of diagnoses and Fetal", group diagnosis "Perinatal encephalopathy," Development disorder," "Increased reflex neuronal excitability," "Hypertension syndrome, hydrocephalus, "dystonia.

Autonomic dysfunction", cerebral palsy. As you might guess, the skull and cervical spine are the weakest parts of the child's body during childbirth because they bear the main burden. And no matter how hard the head appears, no matter how reliable its conception by nature, but in the case of pregnancy Severe overload, its structure is relatively weak because the newborn's skull consists of many small bones, almost independent of each other. During childbirth, the bones of the head are highly mobile, and as a result of some forced or accidental violations of the algorithm of movement may change the bones of the skull, which can lead to their displacement, which leads to traumatic brain injury and, as a consequence, impaired cerebral blood flow (including ischemia or hypoxia-hypoxia), cerebral hemorrhage.

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