a significant correlation between consanguineous marriages and CH risk, and the impact of parental education and antenatal care on disease outcomes.

References:

1. Abu- Hasseba, A. (2011). Standardization translation and modification of the preschool language scale- 4. **MD thesis of phoniatrics**. Cairo.
2. Adeniran KA, Limbe M. **Review article on congenital hypothyroidism and newborn screening program in Africa; the present situation and the way forward**. Thyroid Disord Ther. 2012; 1: 102. [Google Scholar].
3. Alawneh H. Incidence of congenital hypothyroidism in Jordan. **Menoufia Med J.** 2014; 27:503- 6. [Google Scholar].
4. Al-Wedyan. Ashraf Bader Alddin& Al- Oweidi. Alia Mohammed. **The Effectiveness of Portage Early Intervention Program in Improving Adaptive Behavior Skills with Intellectual Disorders** URL: https://doi.org/10.5539/ies.v15n1p16, 2022.
5. Amini, talaie, Kelishadi, Hovespain, Iranpour, Salek and Khatibi. (2020). **The association between familial and environmental factors and prevalence of congenital hypothyroidism in center of Iran**, https: //doi.org/10.1007/s11356-020-10959-x.
6. Banafsheh Arad, Neda Esmail Zadehha, Ali Homaei, Farzaneh Rohani, Fatemeh Saffari**. Comparison of Intelligence Quotient in Early Treated Neonates with Congenital Hypothyroidism Compared to Healthy Children.** 2020.
7. Catherine Peters& Nadia Schoenmakers Mechanisms In Endocrinology: **The pathophysiology of transient congenital hypothyroidism**, 2022.
8. Deepthi Joella Fernandes1, **Suman Rath2 Sri Lanka Journal of Child Health**, 2024; 53(2): 135- 138 DOI:https://doi.org/10.4038/ sljch.v53i2.10830.
9. Eun Kyo Ha, Ju Hee Kim, Hye Ryeong Cha, Gi Chun Lee, Jeewon Shin, Eun Lee, Won Seok Lee, Eun- Gyong Yoo, Mo Kyung Jung, Man Yong Han Assessment of Neurodevelopment and Growth in Congenital Hypothyroidism 2023, **The Journal of Clinical Endocrinology&** December 2023, Pages e1588- e1596, https://doi.org/ 10.1210/clinem/dgad364.
10. Fariba Abbasi, Leila Janani, Malihe Talebi, Hosein Azizi, Lotfali Hagiri & Shahnaz Rimaz **Thyroid Research** volume 14, Article number: 11 (2021) Cite this article.
11. French association of ambulatory pediatrics (AFPA). **(AFPA) The CRESS researchers therefore formed a public- private partnership with the French association of ambulatory pediatrics (AFPA) and the company CompuGroup Medical. That is why these new curves are named AFPA- Inserm/CRESS- CompuGroup Medical** 2018.
12. Karasik LB, Tamis- lemonda CS, Adolph KE. Transition from crawling to walking and infants' actions with objects and people. **Child Dev** 2011.
13. Kumar, S., Balakrishnan, S.& Gupta, S. (2018). **Cognitive outcomes in children with congenital hypothyroidism: A review of long- term studies**.
14. Lamônica DAC, Anastácio- Pessan FDL, Ferraz PMDP, Ribeiro CDC. **Performance in motor, communicative and cognitive skills of girls with congenital hypothyroidism treated from the neonatal period**. Codas. 2020; 32(1): e20190017. [PubMed].
15. Linda M Thienpont, James D Faix, Graham Beastall. Endocr J. 2015; 62(10): 855- 6. doi:10.1507/endocrj.EJ15-0382. Epub 2015 Jul 22.
16. Rastogi MV, LaFranchi SH. Congenital hypothyroidism. **Orphanet J Rare Dis**. 2010; 5: 17.
17. Rousset B, Dupuy C, Miot F., Dumont J. **Chapter 2 Thyroid Hormone Synthesis and Secretion**. 2015.
18. S. Menotti. C. Mura, S. Raia, L. Bergianti, S. De Carolis, D. M. Romeo. C. A. Rota. A. Pontecorv. (2024). Overt hypothyroidism in pregnancy and language development in offspring: is there an association?. **Journal of Endocrinological Investigation** (2024) 47: 2201- 221.
19. Soliman AT, Azzam S, Elawwa A, et.al. Linear growth and neurode-velopmental outcome of children with congenital hypothyroidism detected by neonatal screening: a controlled study. **Indian J Endocrinol Metab**. 2012; 16: 565- 8.
20. Toktaş İ, Erdem Ö, Sarıbaş S, Özbek MN. Evaluation of patients diagnosed with congenital hypothyroidism by newborn screening between 2011- 2019 in Diyarbakır, Turkey. **Medicine** 2023; 102:51(e367.
21. Van Der Sluijs Veer L, Kempers MJ, Last BF, Vulsma T& Grootenhuis **MA**. Quality of life, developmental milestones, and self-esteem of young adults with congenital hypothyroidism diagnosed by neonatal screening. **Journal of Clinical Endocrinology and Metabolism** 2008.
22. World Health Organization. **Training Course on Child Growth Assessment**. Geneva: WHO; 2008.

٢٣.محمود السيد أبوالنيل. (٢٠١١). **مقياس ستانفورد بينيه للذكاء– الصورة الخامسة– المؤسسة العربية لاعداد وتقنين ونشر الاختبارات النفسية**، القاهرة، مصر.

Table (4) Comparison between control& cases regards associated comorbidities

Associated Comorbidities			Mean±SD	Median	Range	(t)	P Value	Sig.
Antenatal Period	Mother Age (Years)	Control	30.4±4	30	24- 39	0.05	0.961	NS
		Case	30.3±5	30	18- 43			
			Control (n= 40)	Case (n= 40)	Tota (n= 80)l	x^2	P Value	Sig.
	Antenatal Care	Yes	38(95.0%)	10(25.0%)	48(60.0%)	40.8	<0.001	Hs**
		No	2(5.0%)	30(75.0%)	32(40.0%)			
Natal		Mean	Mean±SD	Median	Range	(Z)	P Value	Sig.
	Birth Wt.	Control	3±0.4	3.0	2.3- 3.8	1.30	0.195	NS
		Case	3.2±0.5	3.0	2.5- 4.5			
			Control (n= 40)	Case (n= 40)	Total (n= 80)	x^2	P Value	Sig.
	Gestational Age	Full Term	38(95.0%)	33(82.5%)	71(88.8%)	3.13	0.077	NS
		Preterm	2(5.0%)	7(17.5%)	9(11.3%)			
	Mode Of Delivery	NVD	14(35%)	26(65%)	40(50%)	7.20	0.007	HS
		CS	26(65%)	14(35%)	40(50%)			
Post Natal	NICU	Yes	7(17.5%)	8(20.0%)	15(18.8%)	0.08	0.775	NS
		No	33(82.5%)	32(80.0%)	65(81.3%)			
	Jaundice	Yes	11(27.5%)	14(35.0%)	25(31.3%)	0.52	0.469	NS
		No	29(72.5%)	26(65.0%)	55(68.8%)			

Z= Mann Whitney Test, t= independent samples Test, x^2= Fisher's Exact Chi- Square Test, HS= P<0.01, S<P= 0.05, NS= P>0.05

There is no significant difference between cases group 1st yr, 2nd yr and control group in IQ scoring presented in table (5).

Table (5) comparison between cases group 1st yr, 2nd yr and control group in IQ

		N	Mean	SD	Median	Min	Max.	Kruskal Wallis	P	Sig.
IQ	Control	40	100.1	9.5	100	79	115	2.5	0.084	NS
	1st. Yr.	40	96.5	11.8	100	70	120			
	2nd Yr.	40	102.4	13.8	110.0	75.0	125.0			

Discussion:

There is a large variability in prevalence of CH among different regions around the world. In a study carried by (Rastogi, LaFranchi, 2010) and it was indicated that congenital hypothyroidism is lowest among in black individuals and the highest in Asian populations. Higher rate of congenital hypothyroidism has been observed world- wide. (Toktas, et.al, 2023)

The current study found Around 50% of Children in all cases group belonged to a consanguineous marriage which is also agreed with the study done by (Amini, et.al, 2020) who found that parenteral consanguinity was 1.5 times more frequent among neonates with congenital hypothyroidism compared to those normal peers.

The current study analysis revealed a higher prevalence of consanguineous marriages in the case group (42.5% vs. 12.5% in controls). This aligns with findings from (Fariba, et.al, 2021), a study involving 680 participants found that 364 (53.53%) were male. It was observed that a family history of congenital hypothyroidism (OR = 5.09, 95% CI: 1.66- 15.63) and parenteral consanguinity (OR= 2.19, 95% CI: 1.51- 3.17) were linked to an increased risk of permanent congenital hypothyroidism. Which suggest that consanguinity can increase the risk of congenital disorders, including thyroid dysfunctions? A higher rate of genetic disorders has been observed in patients with congenital hypothyroidism. (Toktas, et.al, 2023)

Congenital hypothyroidism is reported to be higher among preterm and low birth weight. In the current work revealed that 17% of children with CH were preterm compared to 5% only in control group. A study in Qatar indicated that there is no significant both children with CH and without all were of the same gestational age. (Soliman, et.al, 2012)

The current work determined that all children were average weight. This was contradicting what has been reported by Toktas, et.al (2023).

The current work determined that vaginal delivery was higher among cases group. This was opposite to Menotti, et.al (2024). The same study revealed high incidence of IUGR.

The current study revealed that, there is no statistically significant difference between cases 2nd yr.& control regards IQ. The IQ data revealed no significant differences between the control group and case group across the first and second years. The maximum IQ scores in the case group improved from 120 in the 1st year to 125 in the 2nd year, which is comparable to the control group maximum IQ of 115. So no difference statistically significant in IQ scores was found between the groups, a finding that was similarly announce in (Deepthi, et.al, 2024) who emphasizing the effectiveness of early diagnosis& thyroxine treatment in managing cognitive development in children with CH.

The current study revealed that no statistically significant differences between cases, 2nd yr.& control regards IQ The IQ data revealed no significant differences between the control group and case group across the first and second years. The maximum IQ scores in the case group increased from 120 in the 1st year to 125 in the 2nd year, this is comparable to control groups maximum IQ of 115, showing no statistically significant difference in IQ scores between groups. However, (Banafsheh, et.al, 2020) reported different finding, The mean IQ of treated children with congenital hypothyroidism was lower than that of the control group, although 73.1% of them had normal IQ. Early diagnosis and treatment with high doses or thyroid hormones, along with patient compliance, can prevent intellectual disabilities.

Conclusion:

Congenital hypothyroidism is more commonly observed in male child,

Introduction:

Congenital hypothyroidism is the most preventable endocrine disorder in newborn and is also the primary preventable cause of intellectual disabilities. (Adeniran& Limbe, 2012)

Congenital hypothyroidism occurs in approximately 1 in 4000 to 1 in 3000 newborns globally. The incidence can vary, influenced by factor such as race, ethnicity, and the methods used for screening. (Alawneh, 2014)

Children with congenital hypothyroidism exhibited more sever neurodevelopmental impairments and stunting height- for- age- z- score. (Eun, et.al, 2023)

Cognitive and motor impairments in patient of congenital hypothyroidism can impact their social interaction, self-esteem, and emotional, behavioral, and psychological well-being. Parents must aware that congenital hypothyroidism can lead to cognitive and motor impairments later in child grow, as a result make congenital hypothyroidism source of worry, as it signals that their child may develop differently from other children. (Van, et.al, 2008)

A study by Toktas, et.al (2023) stated that among their sample, 29.8% of children with transient type of hypothyroidism belonged to relatives' marriage while 44.2% of children with permanent hypothyroidism have a consanguineous marriage.

Objectives:

The present study aimed to assess the socio-demographic aspect of children with Congenital hypothyroidism.

Subjects and Methods:

This is descriptive study, In the form of socio-demographic data recording by mother or father of children during this time between June 2021 to June 2023 at the endocrinology clinic of 6th October Insurance hospitals.

All patients are subjected to an assessment protocol included; Detailed history taking which cover the following items:

1. Demographic data, Sociodemographic data (including parents' education, occupation, consanguinity, Risk factors (including prenatal care, natal factors such as mode of delivery, birth weight, birth term, neonatal intensive care admission (NICU), postnatal factors including type of feeding after birth, birth injures, jaundice, past history for the childhood illnesses& hospital admission, and family history of similar conditions.
1. Laboratory assessment: Highly specific and sensitive chemiluminescent and radioimmunoassay are used to measure serum Free T4 and TSH. (Linda, et.al, 2018)
2. Drug history taking included: (starting dose, current dose, compliance).
3. cogenitive assessment: IQ by Stanford -Binet Intelligence scale- fifth edition (Abu El-Neil, 2011), IQ in the current work was done by psychologist.

Results:

The current work determined that there are differences between the males and females regarding their general profile of congenital hypothyroidism among each gender. Around 80% of parents in the case group are either low educated or illiterate. The case group experienced a later order of birth compared to the control group, around 40% children come out of relatives' marriage.

The demographic data for male and female children with CHT was presented in table (1) and (2). Tables showed that 43% of males and females' children with CHT were off springs of relatives' marriage.

Table (1) Demographic data characteristics of studied females in case and control groups

		(N) Mean	SD	Median	Range	T	P Value
Age	Female Control	2.7	0.6	2.7	2- 3.6	1.011	0.328 Ns
	Female Case	2.5	0.3	2.4	2.1- 2.9		
		Control (n= 7)	Cases (n= 7)	Total (n= 17)	x^2	P Value	Sig.
Education	Bachelor's	5(80.0%)	1(14.3%)	9(52.9%)	7.1	0.028	S
	Middle Education	1(10%)	3(42.9%)	4(23.5%)			
	Illiterate	1(10%)	3(42.9%)	4(23.5%)			
Consanguineous Marriage	+Ve	0	3 (42.9%)	3(17.6%)	5.2	0.023	S
	- Ve	7(100%)	4(57.1%)	14(82.4%)			
Order Of Birth	1st	4(65.0%)	0	7(41.2%)	8.4	0.015	S
	2nd	2(25.0%)	4(57.1%)	6(35.3%)			
	3rd	1(10.0%)	3(42.9%)	4(23.5%)			

t= independent samples Test, x^2= Fisher's Exact Chi- Square Test

Table (2) Demographic data characteristics of studied males in case and control groups

		Mean	SD	Median	Range	T	P Value
Age	Male Control	2.4	0.5	2.4	1.6- 3	0.12	0.904 Ns
	Male Case	2.3	0.5	2.3	1.1- 3.5		
		Control (n= 33)	Cases (n= 33)	Total (n= 63)	x^2	P Value	Sig.
Education	Bachelor's	24(76.7%)	7(21.2%)	30(47.6%)	20.1	<0.001	HS
	Middle Education	6(16.7%)	13(39.4%)	18(28.6%)			
	Illiterate	3(6.7%)	13(39.4%)	15(23.8%)			
Consanguineous Marriage	+Ve	6(16.7%)	14(42.4%)	19(30.2%)	4.9	0.031	S
	−Ve	27(83.3%)	19(57.6%)	44(69.8%)			
Order Of Birth	1st	15(46.7%)	4(12.1%)	18(28.6%)	13.4	0.020	S
	2nd	10(30.0%)	11(33.3%)	20(31.7%)			
	3rd	6(16.7%)	7(21.2%)	12(19.0%)			
	4th	1(3.3%)	9(27.3%)	10(15.9%)			
	5th	1(3.3%)	1(3%)	2(3.2%)			
	6th	0	1(3%)	1(1.6%)			

t= independent samples Test, x^2= Fisher's Exact Chi

Also, the current work determined that there are significant differences between males and females in 2nd year as female children need higher dose of levothyroxine presented in table (3).

Table (3) Comparison between cases male and females with CHT in the (2nd year)

Cases 2nd. Yr.		N	Mean	SD	Median	Range		T/Z	P Value	Sig.
						Min.	Max.			
Current Dose	Male	33	28.7	18.6	25.0	12.5	87.5	2.5b	0.013	S
	Female	7	51.7	29.1	50.0	25.0	112.0			

Mothers in the control group reported that they receive antenatal care during their pregnancy more frequently than mothers in the cases group.

Also, Data showed that delivery mode by Caesarian section was significantly higher among mothers of children in control group. Data are shown in table (4).

Assessment of socio- demographic data in children with congenital hypothyroidism

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Summary

Background: Congenital hypothyroidism is a widespread heath problem that impact children globally. Most newborn with congenital hypothyroidism doesn't show symptom at birth, however if not promptly treated will result in significant neurodevelopmental dysfunction. Male children with Congenital hypothyroidism showed a demographic data that differentiate them from female affected children.

Aims: The present study aimed to assessment of socio- demographic data in children with congenital hypothyroidism.

Methodology& Sample: This is A descriptive study was conducted on 4 groups. Group Ia group of 33 male children with congenital hypothyroidism and group Ib included 33 matching healthy boys. Group IIa included 7 females with Congenital hypothyroidism and group IIb composed of 7 matching healthy girls. Both groups subjected to initial assessment protocol included elementary diagnostic sheet for socio-demographic data collection. All children were subjected to Standford Binet 5th edition.

Results: The current work determined that there are differences between the males and females regarding their general profile of congenital hypothyroidism among each gender. Around 80% of parents in the case group are either low educated or illiterate. The case group experienced a later order of birth compared to the control group. Around 40% children come out of relatives' marriage. Also, the current work determined that there are significant differences between males and females in 2nd year as female children need higher dose of levothyroxine. Mothers in the control group reported that they receive antenatal care during their pregnancy more frequently than mothers in the cases group. Also, Data showed that delivery mode by Caesarian section was significantly higher among mothers of children in control group. There is no significant difference between cases group 1st yr, 2nd yr and control group in IQ scoring. Congenital hypothyroidism is more commonly observed in male child, a significant correlation between consanguineous marriages and CH risk, and the impact of parental education and antenatal care on disease outcomes.

تقييم البيانات الاجتماعية والديموغرافية لدى الأطفال المصابين بقصور الغدة الدرقية الخلقي

الخلفية: قصور الغدة الدرقية الخلقي هو مشكلة صحية واسعة النطاق تؤثر على الأطفال على مستوى العالم. معظم الأطفال حديثي الولادة الذين يعانون من قصور الغدة الدرقية الخلقي لا تظهر عليهم الأعراض عند الولادة، ولكن إذا لم يتم علاجهم على الفور فسوف يؤدي إلى خلل كبير في النمو العصبي. أظهر الأطفال الذكور المصابون بقصور الغدة الدرقية الخلقي بيانات ديموغرافية تميزهم عن الأطفال المصابين بالإناث.

الاهداف: هدفت الدراسة الحالية إلى تقييم البيانات الاجتماعية والديموغرافية لدى الأطفال المصابين بقصور الغدة الدرقية الخلقي.

المنهج والعينة: هذه دراسة وصفية أجريت على ٤ مجموعات. المجموعة Ia تضم ٣٣ طفلا ذكرا مصابين بقصور الغدة الدرقية الخلقي ومجموعة Ib وتضمنت ٣٣ طفلا أصحاء متطابقين. تضمنت المجموعة IIa 7 إناث مصابات بـــ قصور الغدة الدرقية الخلقي والمجموعة IIb مكونة من ٧ فتيات أصحاء متطابقات. شملت كلا المجموعتين الخاضعتين لبروتوكول التقييم الأولي ورقة تشخيصية أولية لجمع البيانات الاجتماعية والديموغرافية. خضع جميع الأطفال إلى الإصدار الخامس من برنامج Standford Binet.

النتائج: وقد توصلت الدراسة الحالية إلى وجود فروق بين الذكور والإناث فيما يتعلق بالمفهوم العام لقصور الغدة الدرقية الخلقي بين كل جنس. فحوالي ٨٠% من الآباء في مجموعة الحالات إما من ذوي التعليم المنخفض أو الأميين. وقد شهدت مجموعة الحالات ترتيبا متأخرا للولادة مقارنة بمجموعة التحكم. وحوالي ٤٠% من الأطفال يأتون من زواج الأقارب. كما توصلت الدراسة الحالية إلى وجود فروق كبيرة بين الذكور والإناث في السنة الثانية حيث تحتاج الأطفال الإناث إلى جرعة أعلى من الليفوثيروكسين. وأفادت الأمهات في مجموعة المراقبة أنهن يتلقين رعاية ما قبل الولادة أثناء الحمل بشكل أكثر تكرارا من الأمهات في مجموعة الحالات. وأظهرت البيانات أيضا أن طريقة الولادة عن طريق العملية القيصرية كانت أعلى بشكل ملحوظ بين أمهات الأطفال في المجموعة الضابطة، ولا يوجد فرق كبير بين مجموعة الحالات السنة الأولى والسنة الثانية والمجموعة الضابطة في تسجيل معدل الذكاء. تم ملاحظة قصور الغدة الدرقية الخلقي بشكل أكثر شيوعا عند الأطفال الذكور، وهناك علاقة كبيرة بين زواج الأقارب ومخاطر CH، وتأثير تثقيف الوالدين والرعاية السابقة للولادة على نتائج المرض.

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