

CODEN [USA]: IAJPBB ISSN: 2349-7750

## INDO AMERICAN JOURNAL OF

# PHARMACEUTICAL SCIENCES

SJIF Impact Factor: 7.187 http://doi.org/10.5281/zenodo.4129221

Avalable online at: http://www.iajps.com Research Article

# RESEARCH STUDY IN THE GENETIC HEMOGLOBIN IN TYPE 1 DIABETES

<sup>1</sup>Sadaf Zahra, <sup>2</sup>Uroosa Zahara, <sup>3</sup>Syeda Sabah Zahra <sup>1</sup>Jinnah Hospital Lahore.

**Article Received:** August 2020 **Accepted:** September 2020 **Published:** October 2020

#### Abstract:

It is pervious observed that the type 1 diabetes is a type of diabetes in which patient have the higher level of sugar and glucose level. It is caused by the two main auto antibodies anti gad and anti ia2. It is observed that these two antibodies are responsible for making of insulin due to these two auto antibodies the destruction of beta cells begin that cause no observance of insulin in the blood cell. It is also observed that the what glycated hemoglobin what it effects in a body. It is also observed in this study that the how glycated hemoglobin what its plays a role in a glycemia in a diabetes. It is also observed in this study that the how the environmental and the genetic factors effect on all that. It is also observed in previous study that the how the genes of parents and grandparents effects on the child it is also observed that the child from the previous background of type 1 diabetes have greater than the 11 percent more chances of diabetes in a future. It is also observed that the patient have from type 1 diabetes had more chances of the diabetes in a future. It is also observed in the previous studied that the child are not from the diabetes background have less chances of diabetes in a future. For the calculating of that the genetic determinants we use a study called the genome wide study. For the calculation for the different study we use the analysis methods it is called the Meta analysis.

**Keywords:** Glycated hemoglobia, glycemia, glycated, diabetes background, meta-analysis, genetic determinants, analysis method, future chances of diabetes.

### **Corresponding author:**

**Dr. Sadaf Zahra**, *Jinnah Hospital Lahore*.



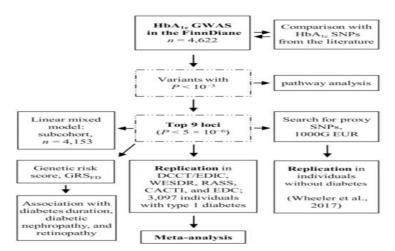
Please cite this article in press Sadaf Zahra et al, **Research Study In The Genetic Hemoglobin In Type 1 Diabetes., I**ndo Am. J. P. Sci, 2020; 07(10).

#### **INTRODUCTION:**

Diabetes have its two form 1st form is a form of diabetes in which patient have a higher level of sugar and glucose level [1]. The form 2 diabetes is a type of diabetes which effects and metabolizes the sugar level of a body and the other important fuels of a body which helps a body for running in the normal condition [2]. It is observed that the important part of a body is the glycated hemoglobin it is generally associated with the blood glycemia [3]. The hba also called the glycated hemoglobin [4]. It is also observed that the body hba also used to observe the glycemic control [5]. The hba also used to find the form 2 diabetes. In which the important fuel of body become less [6]. By using the hba we find the glycemic level of a body it is also observed that the using of drugs and other insulin things it affects the hba level [7]. We already performed the experiment on the hc subject by using the Meta analysis in mayo hospital Lahore [8].

#### **METHODOLOGY:**

This study performed in the mayo hospital Lahore. It is kept in eye that the data is collected from the laboratory in the mayo hospital Lahore. It is observed that the all patients all have a strictly clinical observation. It is observed that the sex age and the patient from the background of diabetes. It is also taken the test called the albumin excreation rate by using all the overnight. This test had taken after the every 24 hours. In this test we collected the urine of the patient. We observed that the we have a patient of age<39 years. It is also observed that the all patients have met a insulin treatment in the last year. After the diabetes 1 had detected in the body. It is kept in eye that patient should have the treatment in the last year. We also study that the is patient have from the genetic diabetes background or not. In this study we perform the calculation of power and it is observes with the quanto. Quanto is software which is used to find the power of a degree. As it shown in the following figure. In the following picture it is shows that the patients have the hba. It also shows the gawas study it is also observed that the linear mixed vales as shown in following figure.

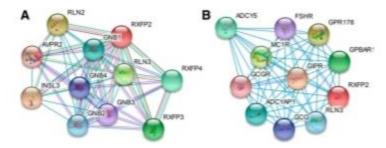


#### **RESULT:**

The result of this study is that the hba level of a body is 9.0 and have the 2as shown in above figure. This value has been observed by using the software called the quanto. It is observed that the according to genetic effect the chances included the genetic view of the body is that the is the patient are from the form 1 diabetes or not. It is also that the chromosome level of the body according to the log value as shown in following figure.

Variant	EA < QA	MAF (%)*			rt				HbA <sub>1c</sub> association in a Finnish T1D cohort		HbA <sub>to</sub> association in an East Asian population without diabetes		
		FD	EAS	SAS	EUR	FD	EAS	SAS	EUR	β (95% CI)	P	β (95% Cf)	P
rs2085277	T <a< td=""><td>4.2</td><td>38.5</td><td>9,2</td><td>1.2</td><td></td><td></td><td></td><td></td><td>0.42 (0.27, 0.56)</td><td>1.5 × 10<sup>-8</sup></td><td>0.02 (0.006, 0.03)</td><td>0.005</td></a<>	4.2	38.5	9,2	1.2					0.42 (0.27, 0.56)	1.5 × 10 <sup>-8</sup>	0.02 (0.006, 0.03)	0.005
rs1360072	C <t< td=""><td>4.1</td><td>34.6</td><td>9.0</td><td>1.2</td><td>1.0</td><td>0.75</td><td>0.95</td><td>1.0</td><td>0.41 (0.27, 0.56)</td><td>1.8 × 10<sup>-8</sup></td><td>0.02 (0.003, 0.03)</td><td>0.013</td></t<>	4.1	34.6	9.0	1.2	1.0	0.75	0.95	1.0	0.41 (0.27, 0.56)	1.8 × 10 <sup>-8</sup>	0.02 (0.003, 0.03)	0.013
rs17076364	T <c< td=""><td>3.1</td><td>2.5</td><td>0.2</td><td>1.2</td><td>0.97</td><td>0.04</td><td>0.02</td><td>1.0</td><td>0.45 (0.29, 0.61)</td><td><math>2.6 \times 10^{-6}</math></td><td>NA.</td><td>NA.</td></c<>	3.1	2.5	0.2	1.2	0.97	0.04	0.02	1.0	0.45 (0.29, 0.61)	$2.6 \times 10^{-6}$	NA.	NA.
n		4,622	504	503	489	4,622	504	503	489	4.622		23,461	

It is also shows the table according to the different result and are from the variant and according to the position and according to the according to the gene level. As shown in the following figure. The result also shows that the variant and maf and the according to the sas eas and according to the different levels as shown in the following figure.



#### **DISCUSSION:**

We performed this study in mayo hospital Lahore it is shows that the patient have from the genetic background have the issue of the diabetes [9].It is observed that the patient have from diabetes generally have the 11 percent more chances to have diabetes in the future we performed this study by using the meta analysis method and by using the software called the quanto software by using the quanto software we are able to find the value of the degree [10]. It is also observed that the for the further findance[11]. We used the method of we also used the gawas study [12]. Other study to find this result the above figure shown the result according to the different values [13]. Oher types of diabetes and we also using to analysis called the metaanalysis [14]. Some times we see that patients have genetically these diseases in them [15]. Some of them do not have geneticall they randomly get infected with this disease [16]. We find different these types of findings which conclude us to do accurate treatment [17]. So to do treatment first we have to analyze our disease [18]. After this we can do good medication with which patient can survive [19]. Self care is important more than everything [20].

# **CONCLUSION:**

This study had been performed in the mayo hospital Lahore. It is observed that the patient must include the have the age of age < 39 it is also observed that the patient must have the insulin treatment. It is observed that the patient must have the treatment of the insulin in past year since they have the reported as diabetes. In this study we also find that the patient must have the hba. In this study it is also proved that the type 2 diabetes is a type of diabetes in which patient have loss the important chemical and the energy of the body it is also observed that in this study we have to find the glycemic variability in the patient which is used to find the patient have the diabetes or not. It is kept in eye that patient should have the treatment in the last year. We also study that

the is patient have from the genetic diabetes background or not. In this study we perform the calculation of power and it is observes with the quanto. It is observed that the sex age and the patient from the background of diabetes. It is also taken the test called the albumin excreation rate by using all the overnight. This test had taken after the every 24 hours. In this test we collected the urine of the patient. It is observed that the above figure in this study shows the result according to the different group values. It is also observed in previous study that the how the genes of parents and grandparents effects on the child it is also observed that the child from the previous background of type 1 diabetes have greater than the 11 percent more chances of diabetes in a future.

#### **REFERENCES:**

- Syreeni, A., Sandholm, N., Cao, J., Toppila, I., Maahs, D. M., Rewers, M. J., ... & Mauer, M. (2019). Genetic determinants of glycated hemoglobin in type 1 diabetes. *Diabetes*, 68(4), 858-867.
- 2. Snieder, H., Sawtell, P. A., Ross, L., Walker, J., Spector, T. D., & Leslie, R. D. G. (2001). HbA1c levels are genetically determined even in type 1 diabetes: evidence from healthy and diabetic twins. *Diabetes*, 50(12), 2858-2863.
- 3. Soranzo, N. (2011). Genetic determinants of variability in glycated hemoglobin (HbA 1c) in humans: review of recent progress and prospects for use in diabetes care. *Current diabetes reports*, 11(6), 562.
- 4. Perkins, B. A., Ficociello, L. H., Silva, K. H., Finkelstein, D. M., Warram, J. H., & Krolewski, A. S. (2003). Regression of microalbuminuria in type 1 diabetes. *New England Journal of Medicine*, 348(23), 2285-2293.
- Forbes, J. M., Söderlund, J., Yap, F. Y. T., Knip, M., Andrikopoulos, S., Ilonen, J., ... & Forsblom, C. (2011). Receptor for advanced glycation endproducts (RAGE) provides a link between

- genetic susceptibility and environmental factors in type 1 diabetes. *Diabetologia*, 54(5), 1032-1042.
- 6. DeVries, J. H., Snoek, F. J., & Heine, R. J. (2004). Persistent poor glycaemic control in adult Type 1 diabetes. A closer look at the problem. *Diabetic Medicine*, 21(12), 1263-1268.
- Heltianu, C., Guja, C., & Manea, S. A. (2011). Genetic determinants of microvascular complications in type 1 diabetes. In *Type 1 Diabetes Complications*. InTech Open Access Publisher Rijeka, Croatia.
- 8. Sabbah, E., Savola, K., Ebeling, T., Kulmala, P., Vähäsalo, P., Ilonen, J., ... & Knip, M. (2000). Genetic, autoimmune, and clinical characteristics of childhood-and adult-onset type 1 diabetes. *Diabetes care*, 23(9), 1326-1332.
- Wheeler, E., Leong, A., Liu, C. T., Hivert, M. F., Strawbridge, R. J., Podmore, C., ... & Chu, A. Y. (2017). Impact of common genetic determinants of Hemoglobin A1c on type 2 diabetes risk and diagnosis in ancestrally diverse populations: A transethnic genome-wide meta-analysis. *PLoS medicine*, 14(9), e1002383.
- Alibrahim, E., Donaghue, K. C., Rogers, S., Hing, S., Jenkins, A. J., Chan, A., & Wong, T. Y. (2006). Retinal vascular caliber and risk of retinopathy in young patients with type 1 diabetes. *Ophthalmology*, 113(9), 1499-1503.
- Orchard, T. J., Chang, Y. F., Ferrell, R. E., Petro, N., & Ellis, D. E. (2002). Nephropathy in type 1 diabetes: A manifestation of insulin resistance and multiple genetic susceptibilities?: Further evidence from the Pittsburgh Epidemiology of Diabetes Complication Study. *Kidney* international, 62(3), 963-970.
- 12. De Cosmo, S., Argiolas, A., Miscio, G., Thomas, S., Piras, G. P., Trevisan, R., ... & Frittitta, L. (2000). A PC-1 amino acid variant (K121Q) is associated with faster progression of renal disease in patients with type 1 diabetes and albuminuria. *Diabetes*, 49(3), 521-524.
- 13. Appel, E. V., Moltke, I., Jørgensen, M. E., Bjerregaard, P., Linneberg, A., Pedersen, O., ...

- & Grarup, N. (2018). Genetic determinants of glycated hemoglobin levels in the Greenlandic Inuit population. *European Journal of Human Genetics*, 26(6), 868-875.
- Lamichhane, A. P., Crandell, J. L., Jaacks, L. M., Couch, S. C., Lawrence, J. M., & Mayer-Davis, E. J. (2015). Longitudinal associations of nutritional factors with glycated hemoglobin in youth with type 1 diabetes: the SEARCH Nutrition Ancillary Study. The American Journal of Clinical Nutrition, 101(6), 1278-1285.
- Weinstock, R. S., DuBose, S. N., Bergenstal, R. M., Chaytor, N. S., Peterson, C., Olson, B. A., ... & Liljenquist, D. R. (2016). Risk factors associated with severe hypoglycemia in older adults with type 1 diabetes. *Diabetes Care*, 39(4), 603-610.
- 16. Gomes, K. F. B., Santos, A. S., Semzezem, C., Correia, M. R., Brito, L. A., Ruiz, M. O., ... & Da Silva, M. E. R. (2017). The influence of population stratification on genetic markers associated with type 1 diabetes. *Scientific* reports, 7(1), 1-10.
- Skupien, J., Warram, J. H., Smiles, A. M., Niewczas, M. A., Gohda, T., Pezzolesi, M. G., ... & Krolewski, A. S. (2012). The early decline in renal function in patients with type 1 diabetes and proteinuria predicts the risk of end-stage renal disease. *Kidney international*, 82(5), 589-597.
- 18. Florez, J. C. (2010). A genome-wide association study of treated A1C: a genetic needle in an environmental haystack?. *Diabetes*, *59*(2), 332-334
- Katsarou, A., Gudbjörnsdottir, S., Rawshani, A., Dabelea, D., Bonifacio, E., Anderson, B. J., ... & Lernmark, Å. (2017). Type 1 diabetes mellitus. *Nature reviews Disease primers*, 3(1), 1-17.
- 20. Hummel, S., & Ziegler, A. G. (2011). Early determinants of type 1 diabetes: experience from the BABYDIAB and BABYDIET studies. *The American journal of clinical nutrition*, 94(suppl\_6), 1821S-1823S.