

the effect of vitamin E on diabetes mellitus in children in Iraq

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ABSTRACT:

The aim of this study was to investigate if feeding with vitamin E may improve metabolic control and the residual beta-cell function in young patients with recent onset type.

Three dropouts occurred throughout the course of the two years of follow-up. Overall, there was no significant change in glycated hemoglobin between patients in the NA supplementation group and the NA group.2008, 265 (Selvaraj N, Bobby Z).

HbA1c levels), the need for insulin, or the level of C-peptide secretion at rest. There were no changes between the vitamin E and NA-treated groups, although patients diagnosed before age 9 had a total of 32 samples at the time of diagnosis and at the 2-year follow-up had significantly lower levels of C-peptide than those diagnosed after age 9. From one year, 2018 to 2020, 238 C-peptide levels were maintained at diagnosis for the second year in all ages.

Organizations for treatment and categories. Patients above the age limit of nine who had been given NA vitamin E, however, had considerably higher a peptide quantities than the NA group after six weeks of therapy (P, 0.003).2020 will see 191 (Li F, Pei L, and others) Conclusions: When NA is administered alone or combined in concert with vitamin E and intensive insulin treatment, baseline C-peptide production can be sustained for up to 2 years after diagnosis. This finding, which has not previously been published, is crucial for prepubescent.

key words: vitamin E, diagnosis, blood glucose, cytokine, patients .

تأثير فيتامين (هـ) على داء السكري لدى الأطفال في العراق

شيماء ناصر رضا

مستخلص:

كان الهدف من هذه الدراسة هو التحقق مما إذا كانت التغذية بفيتامين E قد تؤدي إلى تحسين التحكم في التمثيل الغذائي ووظيفة خلايا بيتا المتبقية في المرضى الشباب الذين يعانون من نوع بداية حديث. حدثت ثلاثة حالات تسرب على مدار عامين من المتابعة. بشكل عام، لم يكن هناك تغيير كبير في الهيموجلوبين السكري بين المرضى في مجموعة مكملات NA ومجموعة NA.2008 ، 265 (Bobby Z ، Selvaraj N). مستويات (HbA1c)، أو الحاجة إلى الأنسولين، أو مستوى إفراز C-الببتيد أثناء الراحة. لم تكن هناك تغييرات بين المجموعات المعالجة بفيتامين E و NA، على الرغم من أن المرضى الذين تم تشخيصهم قبل سن 9 كان لديهم ما مجموعه 32 عينة في وقت التشخيص وفي المتابعة لمدة عامين كانت لديهم مستويات أقل بكثير من الببتيد C من هؤلاء. تم تشخيصه بعد سن 9. من عام واحد، 2018 إلى 2020، تم الحفاظ على 238 مستوى من الببتيد C عند التشخيص للسنة الثانية في جميع الأعمار.

منظمات العلاج والفئات. ومع ذلك، فإن المرضى الذين تزيد أعمارهم عن تسعة أعوام والذين تم إعطاؤهم فيتامين E من NA كانت لديهم كميات من الببتيد أعلى بكثير من مجموعة NA بعد ستة أسابيع من العلاج (P، 0.003). 2020. سيشاهدون 191 (Li F، Pei L)، واستنتاجات: عندما يتم إعطاء NA بمفرده أو مع فيتامين E وعلاج الأنسولين المكثف، يمكن أن يستمر إنتاج خط الأساس من الببتيد C لمدة تصل إلى عامين بعد التشخيص. هذا الاكتشاف، الذي لم يُنشر من قبل، مهم لمرحلة ما قبل البلوغ.

الكلمات المفتاحية: فيتامين هـ، التشخيص، جلوكوز الدم، السيتوكين، المرضى .

Introduction.

The autoimmune attack on insulin-producing beta cells is the most likely cause of diabetes type 1, and it is helped by cytotoxic T lymphocytes that are sensitive to certain cell-associated antigens. Aggressive insulin treatment has been shown to preserve beta-cell mass for up to a year after the diagnosis of the disorder, with a subsequent fast loss in function (Diabetes Control, 1998,pp 517–523). A variety of adjuvant medications have eliminated the inhibitory impact of cytokine 1b on insulin production in addition to vigorous insulin therapy (Andersen RU, 1994, pp671-678).

The renowned antioxidant vitamin E works as a free oxygen scavenger, preventing lipid oxidation and obstructing cytokine-mediated cytotoxicity (Paredes S, Girona J, 2002, 2271-2277). Interleukin 1, tumor necrosis factor, and interferon-gamma work together to cause cytotoxicity in islet beta cells, while blocking this mechanism protects them.(Pozzilli P, 2003, 956) The cytotoxic effects of cytokines on rat islets have also been shown to be dependent on lipid peroxidation (Rabinovitch A,

1992, 409–413). Additionally, vitamin E has been shown to be useful in preventing major issues with diabetes that persist in type 1 individuals (Kallman B. Burkart U. 1999.pp47).

In a prior trial, supplement was given at the identification of type 1 diabetes with little success (Ludvigsson J,2001,131-136).

Combining these two vitamins may provide amazing results since NA and vitamin E work in various ways to address the problem of islet-beta-cell cytotoxicity.(1988, p. 256; Colette C. Pares).

The aim of this study was to examine the impact of NA alone or NA combined with vitamin E (when administered from diagnosis and continued for up to 2 years) on metabolic control and residual beta-cell function as measured by C-peptide secretion in patients with newly diagnosed type 1 diabetes. This was finished in light of the results stated above and our prior motivational NA-alone experience.

I- Study plan and course of therapy.

Methodology of baseline and safety tests Anthropometric measurements: Height (meter), weight (kilogram), and

body mass index (kilogram per meter square) were measured using an automated body mass index measuring stadiometer BSM 370 (Biospace Co., Seoul, Korea). Waist circumferences were measured using a measuring tape positioned just above the hip bone. The measurement of waist circumference was taken in centimeters just after the patient breathed out.

II-Sample size and assessment of statistical variables.

The number of people taking part in the study was determined using the results of our earlier investigations and subsequent trials on a patient population with a similar age range.

For individuals who were selected to take part in the current experiment (Courtesy of a registry for IDIGs). The trial's objective was an upsurge in baseline C-peptide of 0.13 nM at six months after diagnosis. A two-sided test needed a sample size of 54 patients, with the alpha (chance of a type I mistake) and beta (probability of a type II error) parameters set at 0.05 and 90%, respectively. In order to make sure that there were enough samples to account for cash withdrawals, 64 patients were chosen to participate.

Following the completion of the initial evaluations, patients were divided into two treatment groups using a diluted block design. Table of random numbers using an already prepared list, random Each participating center is assigned a code.

The study was approved by the ethical committee of the Iraqi University / Department of Biology and informed consent It is signed by the parents.

Sample selection.

Participating IMDIAB centers sought out patients with type 1 diabetes who had just developed the illness. The following requirements were used to include patient and NA with antioxidant vitamin E was given to 18. Eleven patients who were older than nine years of age old received NA just, and eleven patients who were older than nine years received NA plus vit

III- How the patient was treated and how much insulin was administered.

1- While 32 subjects (mean (SD) 95.4 years) received NA (25 mg/kg body weight) plus vitamin E (15 mg/kg body weight), 32 patients received (mean (SD) 8.75.3 years) the same amount of NA alone. On the basis

of our previous experience (4), we chose this dosage. 2 All patients received adjuvant therapy with NA, NA-vitamin E, or NA within four weeks after diagnosis.

3- The positive group, no one objected to being randomly selected.

4- Positive group Patients were allocated insulin therapy in an effort to reach optimal metabolic control as soon as possible after diagnosis as well as to maintain blood glucose levels as close to normal as possible.

Every individual got one neutral protamine Hagedorn (NPH) insulin injection before the night in addition to their three norm insulin injections at meal-times. Participating centers committed to the same treatment parameters as in past IMDIAB studies, which were as follows: If the preprandial blood glucose levels were less than 6.5 mmol/l, the diabetic dosage was decreased by 10%; if they were consistently less than 4.5 mmol/l for more than three days, it was reduced by 23%. Insulin continued until the incident Post-prandial blood glucose levels measured at home were consistently less than 7.5 mmol/l. Patients had their insulin dosage raised by 10% or had their insulin regimen

modified if their blood glucose level was more than 10 mmol/l. In order to change their condition, patients were scheduled for regular (weekly) telephone appointments.

IV-Analysis results .(Wolfram|Alpha).

The personnel at the facility where their identities were registered kept an eye on the study subjects. In addition to receiving three to four daily injections of normal plus intermediate insulin, participants began the study with a diet that was 55% carbohydrates. At least 30 times a week, while fasting and before and after meals, each patient had their capillary glucose concentration tested.

The dosage of subcutaneous insulin was changed to achieve blood glucose levels that were close to normal.

The same medical staff in each participating site checked patients every week during the first month of treatment and subsequently every three months for up to two years. At follow-up appointments, total blood counts, liver, and renal function tests were performed in order to assess drug toxicity. Glycated hemoglobin was tested, with a normal range of 4-7%.

Data analysis was performed with the Statsoft statistics program. Analysis of variance, χ^2 , and t-test were applied wherever practical. Regardless of age at diagnosis, comparisons between patients treated with vitamin E and NA as well as grouping patients into those under 9 years of age and older at diagnosis have been conducted in order to investigate the potential effects of puberty on metabolic variables.

test results.

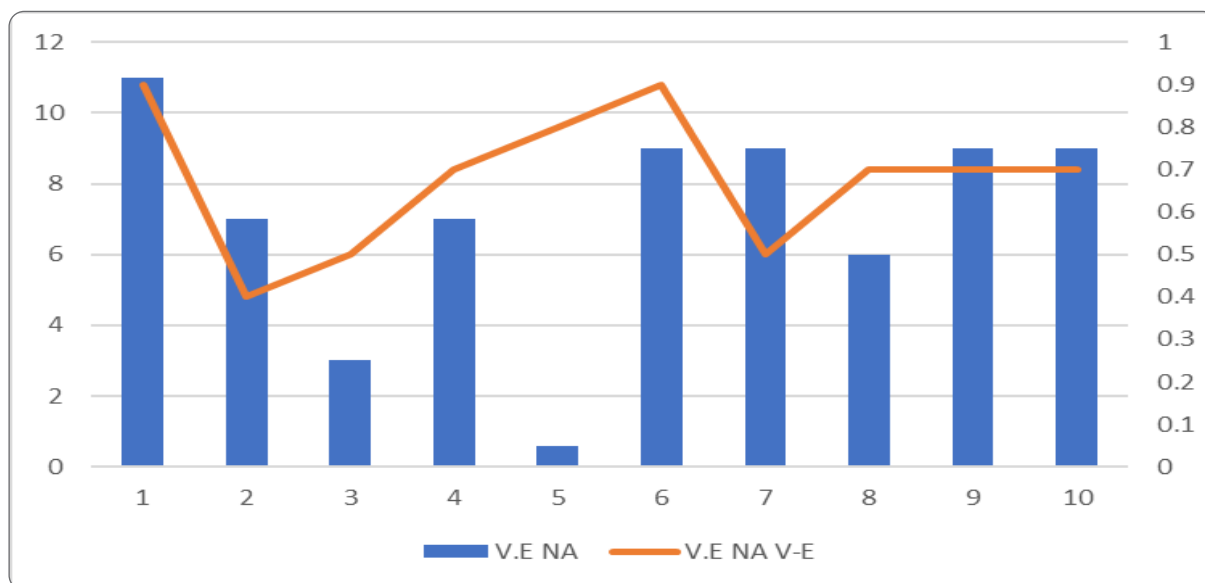
Three withdrawals (one from the NA vitamin E group and two from the NA group) were made as a result of changes.

The first report . Study results are shown in Figures 1 to 3. Over the two-year evaluation period, there were no significant differences between patients randomized to vitamin E or NA treatment in terms of their HbA1c levels (P 14 n.s.). The average HbA1c levels at each time point evaluated ranged between 6 and 7% (1 SD), indicating that good metabolic control was obtained and maintained (Fig. 1). To obtain this level of control, individuals taking NA plus vitamin E required slightly less insulin than those receiving NA alone; However, this distinction did not be-

come statistically significant until eighteen months later (P, 0.03). Second report - the need for insulin in the Narcotics Anonymous group.

Figure 1 presents the complete baseline data for C-peptide secretion. More than two years later, that was the case. Between the two groups, C-peptide levels did not differ significantly. Age at diagnosis was then taken into account when analyzing the data because it may have an impact on how well the surviving beta cells function. Patients' lives were often shorter.

When juxtaposed to patients who had been older (0.220.2 vs 0.320.2 nM respectively (meansS.D.), P, 0.01), patients who were younger than 9 years old at the time of diagnosis had significantly lower C-peptide levels at trial entry. A similar finding was seen at 24 months (0.230.1 vs 0.360.2 nM accordingly (meansS.D.), P, 0.01).



Third report: No significant differences in treatment types were seen in individuals detected before the age of 9 years, except for 6 months, when the NA vitamin E group had significantly higher levels of C-peptide than the NA group (0.400.2 vs. 0.210. 1 nM respectively, P, 0.003). At 6 and 9 months, NA alone significantly raised C-peptide levels in patients detected after the age of 9 compared to the NA + vitamin E group (0.43 and 0.22 vs 0.27 and 0.0.1 nM, respectively; P 0.01). Between the different treatment groups, there were no differences in C-peptide levels after two years.

When HbA1c readings and insulin needs were assessed according to age

at diagnosis, there were no significant changes between age groups (data not shown).

However, in terms of the frequency of severe deficiencies, there were not many differences noted between the two treatment groups.

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