Abstract

Introduction: Graves’ disease is an autoimmune disease with obscure etiology. It may be associated with an underlying emotional stress of any kind. On the other hand abstaining opioid drugs’ addiction is a major stress that can develop this disease. Confronting several patients who were attacked by Graves’ disease, with the history of opioid abstinence led us to investigate them more and report the findings.

Methods: In this case series study 46 patients who were addicted to opioid drugs and have abandoned it less than 9 months from the admission time to endocrinologist were investigated. They all presented the signs and symptoms of Graves’ disease. Thyroid function tests consist of T3, T4 and TSH were measured for each patient and compared against the ones before opioid abstinence. Statistical analysis was performed by using T-Test and SPSS 18.0 software.

Results: 46 patients, which include 2 women and 44 men were studied. The lab results before opioid abstinence confirmed that all were euthyroid. The serum level of T3 increased from 126.3026 ± 34.2356 ng/dl to 311.3696 ± 79.8032 ng/dl after opioid abstinence, this level for T4 also increased from 8.1130 ± 1.54684 ng/dl to 18.4674 ± 3.5589 ng/dl. The difference between thyroid hormone before and after opioid abstinence was statistically significant (P<0.05). The serum level of TSH decreased from 1.3457 ± 0.68043 ng/dl to 0.0289 ± 0.0294 ng/dl which was also statistically significant (P<0.05).

Conclusion: Opioid drugs’ abstinence may develop Graves’ disease. More investigation is suggested.

Introduction

Graves’ disease is a thyroid auto immune disease which is the most prevalent cause of hyper thyroidism in adults [1]. The etiology of this disease remains obscure but is associated to TSI antibody [2]. According to the results of some research it is an autoimmune disease in which IgG is produced and further bound to TSH receptors. As the result thyroid hyperplasia, thyroid hypertyropey and rise in hormone secretion will come to the fore. On the other hand interferon γ secreted by T-cells increases TSH receptors and worsens auto immune reaction toward thyroid [3].

Graves’ disease is more common in women than men (2% in women against 0.2% in men) [4]. It is presented by symptoms of loss of weight, over activity, palpitation, sweating, fatigue, hand tremor, decreased libido, dermatopathy, menstrual disorder (mostly oligo amenorrhea) and the signs of bilateral diffuse enlargement of thyroid, soft to firm consistency and sometimes bruit auscultation. In addition ophthalmpathy is much more prevalent than other clinical presentations of this disease [5].

The potential risk factors of this disease can be referred to genetic susceptibility, infection, stress, pregnancy, irradiation, iodine and drugs [4].

Addiction is one of the biggest disasters of our today’s society, especially among youth [6]. This social disorder came to exist from years ago. Consuming opioid drugs causes short term euphoria, but it has irreversible complications in long term [7].

Opioid drugs and its derivatives affect different organs of the body in various ways. These ways are mostly recognized but, its adverse effects are still vague. In regard to high prevalence of addiction in our country considering this critical issue is highly required [8].

The effect of opioid drugs’ abstinence which may develop thyroid disorder is not declared but confronting several cases of Graves’ disease with the history of opioid drugs’ abstinence, led us to investigate them more and report the findings.
compared against the ones they’ve had before opioid drugs’ abstinence using SPSS software, 18th version and paired T-Test. P value less than 0.05 considered to be significant.

Results

46 patients, which include 44 men (95.65 %) and 2 women (4.35%) with the mean age of 35.1089 ± 6.10001 years old were investigated. The mean period of opioid drug abstinence was 6.3043 ± 2.3081 months. The comparison between the results of lab tests before and after opioid drugs’ abstinence indicates a statistically significant increase in the serum level of T3 (P<0.001). The mean serum level of T3 before and after opioid drugs’ abstinence was 126.3026 ± 34.2356 ng/dl and 311.3696 ± 79.80932 ng/dl respectively. The mean serum level of T3 before opioid drugs’ abstinence was 8.1130 ± 1.54684 ng/dl which then increased to 18.4674 ± 3.5589 ng/dl after abstinence which was also statistically significant (P<0.001).

The mean serum level of TSH decreased from 1.3457 ± 0.68043 ng/dl before opioid drugs’ abstinence to 0.0289 ± 0.0294 ng/dl after it. The difference between them was statistically significant (P<0.001).

The mean serum level of Anti TPO in patients after presenting Graves’ sign and symptoms was 211.9783 ± 134.64 which was much more higher than its normal range (<15). There was no data about the serum level of Anti TPO before opioid drugs’ abstinence.

Discussion

In our study 46 patients who were addicted to opioid drugs and confronted the symptoms such as palpitation, sweating, heat intolerance, loss of weight and etc. less than nine months from the time of opioid drug abstinence were investigated. The lab results indicated significant difference in the level of T3, T4 and TSH before and after abstaining drug abstinence were investigated. The lab results indicated significant (P<0.001). The difference in the level of T3, T 4 and TSH before and after abstaining drug abstinence were investigated. The lab results indicated significant (P<0.001).

In some previous studies malfunction of immune system due to opioid drugs addiction is mentioned [10,11]. In other words immune system in addicted patients is suppressed. After ceasing its consumption this inhibitory effect may be eliminated that can lead to improper and over response of immune system, resulting in Grave’s disease.

The other reason which can explain the onset of Graves’ disease is any kind of emotional stress [4]. Opioid withdrawal can be an origin of stress for opioid addicted patients [9]. Therefore the stress that stem from opioid withdrawal may be an underlying cause of Graves’ disease.

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In some previous studies high prevalence of auto immune diseases between opioid addicted patients is discussed because of the more viral and bacterial infection among them, which may make their body susceptible to auto immune diseases [18].

In conclusion this study was a report of 46 opioid drugs addicted patients who were attacked with Graves’ disease after the abstinence. More investigation is required to prove the relation between opioid consumption and its withdrawal with this disease, so it is suggested to survey on the possible effective factors of Graves’ disease in prospective studies.

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References