Clinical Manifestations of Primary Hyperthyroidism in the Elderly Patients at the Out-Patient Clinic of Srinagarind Hospital

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The authors reviewed the outpatient charts diagnosed as hyperthyroidism at Srinagarind Hospital from June 1998-June 2004. The objective was to compare the clinical features of hyperthyroidism in patients older and younger than 60 years old. There were 922 cases enrolled; 84 cases (9.11%) were 60 years old and above. The female: male ratio was 3.4:1 and 4:1 and the mean ages were 64.2 $\pm$ 3.7 and 37.4 $\pm$ 11.2 years old in the elder and younger group, respectively. The common presentations were dyspnea (94.1, 96.5%), weight loss (93.8, 87.9%) and palpitation (83.3, 93.1%) in the elder and younger, respectively. The more significant clinical presentations in the elder group were atrial fibrillation, weakness and anorexia whereas exophthalmos, goiter, heat intolerance and hyperhidrosis were not as frequent. Thus, the classic presentations often lacked in the elder group. Therefore, unexplained AF, weakness and anorexia should not exclude hyperthyroidism even with paucity of typical clinical features.

Keywords: *Hyperthyroidism, Graves' disease, Older patients, Thailand*

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Hyperthyroidism is the condition caused by overproduction of thyroid hormone. The prevalences are varied, depending on different ethnic, geographic area, and the criteria for diagnosis. In the past, this disorder had been found in the young to middle-age group whereas it is now well recognized in the elder group. The prevalences are varied from 0.5 -2.3% and Graves' disease (GD) is the most common cause of hyperthyroidism in all age groups[1,2]. In the elderly groups, the studies were mainly done in Europe with the prevalence of 10-20%[1,3,4] and a few studies were done in Asia, for example in Taiwan; the prevalence was 6.98%[5].

The classic symptoms and signs of hyperthyroid patients are sympathetic over-activity such as palpitation, dyspnea, weight loss, increase appetite, exophthalmos and skin change. The diagnosis of hyperthyroidism can be easily made in the young patients because of the typical symptoms and signs. On the other hand, the diagnosis of hyperthyroid in the elderly patients are more different and cause higher mortality and morbidity. Some studies showed that three-fourths of the elderly hyperthyroid patients presented atypically; one-third were clinical euthyroid and 15% have a syndrome called apathetic hyperthyroidism. Although it is a common disease, the clinical data of thyrotoxic in elderly patients is lacking in Thailand. Therefore, the objectives of the present study were to determine the prevalence and clinical presentations of hyperthyroidism patients who were treated at Srinagarind Hospital and compared with those of young age patients.

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Material and Method

The authors reviewed all cases diagnosed as Graves' disease between June 1998 and June 2004 at Srinagarind Hospital, Khon Kaen University[1]. All charts were retrospectively reviewed for symptoms and signs at presentation including cardiac and non-cardiac manifestations. All data would be compared between patients aged above and below 60 years old

of age. The SPSS program was used to analyze as percentage and chi-square. The significant statistic is $p < 0.05$.

Results

There were 938 cases enrolled in the present study; missing records were found in 16 cases (1.7%). Therefore, 922 cases (98.3%) were completely studied. There were 838 cases (90.89%) in the younger group and 84 cases (9.11%) in the older group. Females were predominant in both groups, the ratio was 4:1 but the ratio in the elderly was 3.4:1. The average age of the younger group was 37.42 $\pm$ 11.23 (SD) years (range 15-59 years) and the older group was 64.19 $\pm$ 3.66 (SD) years (range 60-75 years), respectively.

The presenting symptoms and signs of each group are shown in Table 1. It compares clinical findings of hyperthyroidism in the elder and younger group. Dyspnea, weight loss and palpitation were the three most common clinical findings and were not different

Table 1. Frequency of symptoms and signs of Graves' disease in patients over 60 years of age versus patients less than 60 years

Symptoms and signs	Age < 60 N = 838	Age > 60 N = 84	p value
Cardiac			
Palpitaion	645 (93.1%)	55 (88.3%)	0.05
Dyspnea	625 (96.5%)	71 (94.1%)	N
Tachycardia	430 (51.3%)	53 (62.4%)	N
Bradycardia	1 (0.5%)	0 (0%)	N
Irregular heart rate	84 (9.9%)	27 (31.8%)	0.00
Total Irregular (AF)	65 (7.7%)	22 (25.9%)	0.00
HF	64 (7.6%)	14 (16.5%)	N
Noncardiac			
Fatigue	64 (28.1%)	9 (37.5%)	N
High intake	128 (47.1%)	7 (29.2)	N
Weight loss	436 (87.9%)	61 (93.8%)	N
Emotion change	220 (74.6%)	18 (32.1%)	N
Hyperhidrosis	245 (83.9%)	19 (65.5%)	0.013
Hoarseness	16 (19.0%)	1 (8.3%)	N
Insomnia	65 (55.1%)	7 (46.7%)	N
Diarrhea	42 (5.0%)	6 (7.1%)	N
Anorexia	80 (90.4%)	19 (22.5%)	0.001
Chest pain	17 (0.9%)	2 (2.4%)	N
Dysphagia	12 (1.4%)	2 (2.4%)	N
Hyperactive	4 (0.5%)	0 (0%)	N
Exopthalmos	138 (16.5%)	5 (5.9%)	0.01
Lid lag	99 (11.8%)	6 (7.1%)	N
Lid retraction	43 (5.1%)	4 (4.7%)	N
Fine tremor	483 (57.6%)	48 (56.5%)	N
Fine and moist skin	267 (31.9%)	28 (32.9%)	N
Plummer's nail	583 (69.6%)	29 (34.1%)	N
Goiter	583 (69.6%)	29 (34.1%)	0.00
Conscious change	19 (2.2%)	2 (2.4%)	N
Proximal m weakness	28 (3.5%)	8 (9.5%)	0.01
Combine			
Tachycardia with AF	35 (4.2%)	15 (17.6%)	0.00
Moist skin with goiter	203 (24.2%)	13 (15.3%)	N
Tachycardia with proximal m weakness	19 (2.3%)	6 (7.1%)	0.01

Note: N = no statistical significance

between both groups. The clinical presentations of the elderly thyrotoxic patients that were found less frequently than the young patients were non-cardiac symptoms and signs, which included exopthalmos, goiter, heat intolerance and excessive perspiration.

Discussion

Thyroid hormone has an important role on many human systems especially the cardiovascular system including cardiac muscle, the peripheral circulation and the sympathetic nervous system. The prior studies showed that thyroid hormone alters hemodynamics causing decreased systemic vascular resistance and consequently, resulted in the increase of blood flow to the skin, muscle, kidney, and heart. Moreover, the other mechanism might be due to a direct vascular action or stimulation of vascular endothelial cell releasing vasoactive substances. Therefore, overproduction of thyroid hormone causing sympathetic hyperactivity and cardiovascular manifestations are predominant clinical features such as palpitation, dyspnea, cardiomegaly, arrhythmia and heart failure. The non-cardiac presentations are also common for example, increased appetite, weight loss, goiter, hyperhidrosis and eye signs[6,7].

GD is the most common cause of primary hyperthyroidism in all age groups although toxic multinodular goitor (TMG) tends to be more common in the older patients. GD is an autoimmune disease that produces B lymphocyte of TSH- receptor antibody causing stimulated thyroid gland overactivity. The classic clinical manifestations are diffuse goiter, exopthalmos and myxedema[8].

Unusual clinical manifestation may be seen in elderly thyrotoxic patients. The more common clinical presentations of GD found in the elder group significantly ($p < 0.05$) was arrhythmia especially atrial fibrillation (AF). Some studies showed increasing age[9] is associated with an increased risk of atrial fibrillation or flutter in patients with hyperthyroidism (OR, 1.7; 95%CI, 1.7-1.8). Furthermore, anorexia and proximal muscle weakness alone were also found more common in the elderly groups. Therefore, the clinical diagnosis is more difficult than in the younger group. Some studies found this atypical presentation began after the age of fifty[8]. The present study found the three most common clinical features were dyspnea, weight loss and palpitation in both groups that correlated with a previous study in France[10]. Moreover, diffuse goiter, exophthalmos, heat intolerance and hyperhidrosis were found significantly less common in the elder group. These findings corresponded with the former studies that goiter was often the key point to diagnosis this condition in the younger group, while it was found less than 50% in the elder group. The etiology of absence of goiter in most of the elderly thyrotoxic patients may imply the presence of kyphosis and age-associated changes in the chest diameter that caused substernal displacement of the thyroid gland[11]. Heart failure and conscious change were not commonly found in either groups. In contrast, many previous studies found these abnormalities more common in the elderly patients (16-71%). This finding may be due to the inclusion criteria of data collection. Some studies enrolled hospitalized patients that were usually more severe cases. Therefore, hyperthyroidism should be in differential diagnosis in elderly patients with unexplained alteration of consciousness and cardiac failure.

The significant symptoms and signs found to be more common in the thyrotoxic patients over the age of 60 years were atrial fibrillation, proximal muscle weakness, anorexia and concomitant AF with proximal muscle weakness especially AF found more distinctly (7.7% versus 25.9%), correlated with the prior studies. Proximal muscle weakness was more common in the elderly group, the previous data showed that it was more common than the present study by about three times[12]. This condition would cause abnormal gait, and postural instability lead to fall and consequent complications. Anorexia and weight loss were rather common in the elderly, 30% of cases may mimic malignancy especially gastrointestinal tract cancer[4,11]. For this reason, hyperthyroidism in this form, also called apathetic hyperthyroidism should be realized in the elderly patients. The combination of some clinical diagnosis of hyperthyroidism from the presented data did not give any benefit from one significantly clinical sign. It was reasonable to consider hyperthyroidism in the elderly who have one important clinical sign such as atrial fibrillation, weight loss, or anorexia.

The present study confirms the previous data that the diagnosis of hyperthyroidism in the elderly thyrotoxic patients is more difficult than the younger patients because of few specific clinical features and low incidence. Patients with unexplained atrial fibrillation, proximal muscle weakness and anorexia should be aware of hyperthyroidism even with paucity of typical clinical manifestations. For this reason, the authors suggest screening TSH test in the patients older than 60 years who present with unexplained AF, proximal muscle weakness and anorexia.

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อาการและอาการแสดงของต่อมธัยรอยด์เป็นพิษในผู้ป่วยสูงอายุของโรงพยาบาลศรีนครินทร์

ปณิตา ลิมปะวัฒนะ, กิตติศักดิ์ สวรรยาวิสุทธิ์, อรรจนี มหรรฆานุเคราะห์, ไชยสิทธิ์ วงศ์วิภาพร

การศึกษานี้ได้สุ่มเก็บข้อมูลจากผู้ป่วยนอกที่ได้รับการวินิจฉัยเป็นโรคต่อมธัยรอยด์เป็นพิษชนิด Graves' disease ของแผนกอายุรกรรม รพ.ศรีนครินทร์ ในช่วงปี พ.ศ. 2541-2547 โดยมีจุดประสงค์เพื่อเปรียบเทียบอาการและอาการแสดงของโรคดังกล่าวในผู้สูงอายุ กับผู้ที่อายุน้อยกว่า 60 ปี พบว่ามีผู้ป่วย 922 รายที่เก็บข้อมูลได้ครบ มีผู้สูงอายุจำนวน 84 คน คิดเป็นร้อยละ 9.11 และสัดส่วนเพศหญิงต่อชายเป็น 3.4: 1 และ 4:1 อายุเฉลี่ย 64.2 $\pm$ 3.7 ปี และ 37.4 $\pm$ 11.2 ปี อาการนำที่พบบ่อย ได้แก่ เหนื่อยง่าย (ร้อยละ 94.1 และ 96.5), น้ำหนักลด (ร้อยละ 93.8 และ 87.9) และ ใจสั่น (ร้อยละ 83.3 และ 93.1)ในกลุ่มสูงอายุ และกลุ่มที่อายุน้อยตามลำดับ อาการที่พบในผู้สูงอายุตั้งแต่ 60 ปี หรือมากกว่าขึ้นไปอย่างมีนัยสำคัญ คือ หัวใจเต้นผิดจังหวะชนิด atrial fibrillation อาการอ่อนแรง และเบื่ออาหาร ส่วนอาการตาโปน คอพอก ขี้ร้อน เหงื่อออกมาก พบได้น้อยกว่า ในผู้ป่วยสูงอายุเหล่านี้