



# Turkish endocrine surgery publications in international scientific journals

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## ABSTRACT

**Objective:** In recent years, major progress has been made in the field of endocrine surgery in Turkey, similar to that in the rest of the world. Parallel to these developments, there has been a significant increase in the number of publications in the related field. Our study aimed to evaluate Turkey's publications related to endocrine surgery in the international arena.

**Material and Methods:** Members of the general surgery departments from academic centers in Turkey were determined. Using these member names, a PubMed search was performed for English papers related to "endocrine surgery." For searching papers from non-academic centers, the same engine was used. To reach manuscripts possibly missed by the PubMed search, 3 national calls were made through the website of the Turkish Society of Endocrine Surgery. The obtained papers were divided into "thyroid," "parathyroid," "adrenal," and "neuroendocrine tumors" and were listed according to the publication year. In addition, all manuscripts were listed according to the publishing journal and the 2012 impact factor of that journal. This study did not require ethical approval, because it did not involve evaluation of experimental or patient data.

**Results:** A search of Turkish general surgery clinics revealed 497 international publications, between 1976 and 2012. When listed according to the year of publication, most publications were found to be in the year 2009. Papers appeared mostly in "*Surgery Today*." The mean impact factor of the journals where the papers have been published was 1.9 (0.1-13.8). The rates of thyroid, parathyroid, adrenal tissue and neuroendocrine tumors related publications were 69%, 10%, 15% and 6%, respectively. Since this study is not an experimental study or a study related to patient data, we did not apply for ethical approval.

**Conclusion:** The contribution of Turkish general surgeons' to world science is apparent when evaluated in terms of publications related to endocrine surgery until recently. Particularly, since 2002, with the increase in the number of publications in the field of endocrine surgery, there has been an increase in Turkey's importance on the international platform.

**Keywords:** Endocrine surgery, Turkey, publications

## INTRODUCTION

John Hunter adopted the opinion that a surgeon's training is not only based on skills but also on clinical practice and patient follow-up, and that true learning may be accomplished through research, about 200 years ago (1). In this context, the contribution of a surgeon to science and literature through clinical studies is important. In a study conducted in the UK, a decline in the contribution of surgeons to the literature was detected in recent years with a similar decrease in the United States. However, an increase in this respect is reported in evaluations across Europe (2). Although there are no international or national studies specifically focusing on the status of endocrine surgery in years, publications on endocrine surgery have contributed to the acceleration in European studies (3). As in the entire world, there has been a great progress in the field of endocrine surgery and a significant increase in endocrine surgery publications parallel with these developments, in Turkey.

Today, Turkey's contribution to international science is not enough. Our contribution to medicine is well below the potential of our country (4). When our country's status is evaluated according to the criteria of 'publication number', and considering publications until 2006, the Turkish Scientific and Technological Research Council (TUBITAK) reported that Turkey's contribution to world science could not exceed 0.6% (5). The purpose of this study was to search endocrine surgery publications from Turkey and determine the contribution of our general surgeon's endocrine surgery experience to world science, and to demonstrate the role of Turkey in international endocrine surgery platform. To our knowledge, this study is the first of its kind in Turkey.

## MATERIAL AND METHODS

The names of all faculty members who served in University Hospital General Surgery Departments in Turkey were determined through the official university websites and were listed in alphabetical order. Then, all publications of these authors that were written in English were searched by PubMed data network (<http://www.ncbi.nlm.nih.gov/pubmed>). Of these publications, those related to endocrine surgery

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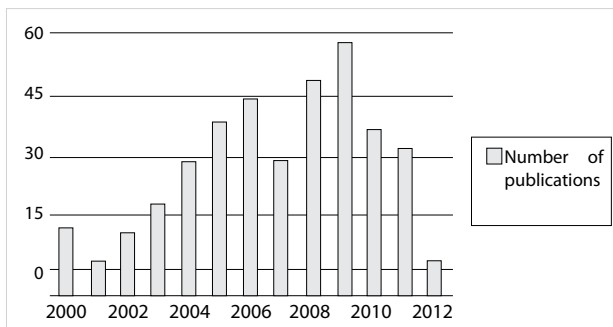


Figure 1. Number of publications according to years

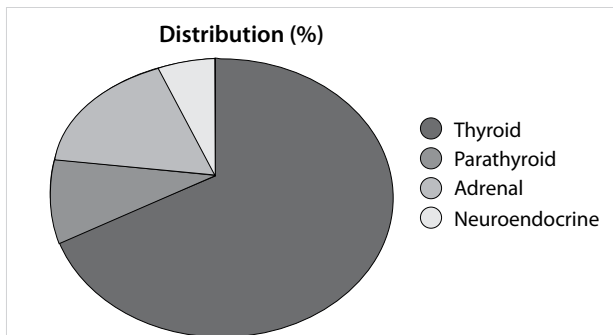


Figure 2. Distribution of articles according to endocrine organ

has been chosen and listed in chronological order. In order to access other international manuscripts that were not listed by PubMed, three announcements with an interval of one month were made through the official website of the Endocrine Surgery Society, 'www.endokrincerrahisi.org', requesting all members to include all their publications on endocrine surgery that was not included in this list through electronic mail.

Since publications from non-university general surgery clinics were also aimed to be accessed, to identify manuscripts published between January 1976 and December 2012, and to both check and expand the list, another search was performed with PubMed data network. The keywords for this survey were as follows: "Thyroid, Turkey"; "Thyroid surgery, Turkey"; "Parathyroid, Turkey"; "Parathyroid surgery, Turkey"; "Neuroendocrine tumor, Turkey"; "Neuroendocrine tumor surgery, Turkey"; "Adrenal, Turkey" and "Adrenal surgery, Turkey". The articles were ranked according to the journal they were published in and the impact factor of these journals in 2012. Manuscript distribution according to years was also determined. Articles were classified as thyroid, parathyroid, adrenal and neuroendocrine tumors. Publications of Turkish surgeons written while they were studying abroad were excluded from the study. An ethical approval was not obtained since this study was neither experimental nor related to patient data.

## RESULTS

There were 13 replies to the first call from the Endocrine Surgery Association website, 8 answers to the second call with no return to the third call. In the search performed, 497 articles were identified to have been published from general surgery clinics of our country in the field of endocrine surgery between 1976-2012. The distribution of publications by year showed that the first publication was made in 1976, 82% being made in the last decade, and most annual manuscripts (59/year) were published in the year 2009. Ninety of the 497

manuscripts were written between 1976 to 2000, while the rest were published after 2001 (Figure 1). In addition to this, the fact that there were no publications in between 1976 to 1991 was noticed.

Classification of articles according to the organ of interest revealed that the majority of studies was related to 'thyroid'. There were 347 (69%) articles on 'thyroid', 48 (10%) on 'parathyroid', 73 (15%) on 'adrenal', and 29 (6%) on 'neuroendocrine tumors' (Figure 2). When the distribution of the articles according to journal type was analyzed, it was identified that general surgery, internal medicine, endocrinology, transplantation and trauma journals were preferred. The total number of journals that the 497 articles were published in was 174. The journal with most publications was 'Surgery Today' with 34 (7%) articles. This journal was followed by 'International Journal of Surgery' and 'Acta Chirurgica Belgica' with 27 (5.5%) and 22 (4.4%) manuscripts, respectively.

The impact factors for these three journals in 2012 were 0.963, 1.436 and 0.359, respectively. The median impact factor of all journals within this series was 1.981 (0.1 to 13.853). The study on the role of calcitonin, parathyroid hormone and serum albumin in hypocalcemia after thyroidectomy was published in the journal with the highest impact factor, 'The Tokai Journal of Experimental and Clinical Medicine' with an impact factor of 13.853 (Table 1) (6).

When published articles were examined in terms of allocation according to hospitals, 406 (82%) were from university hospitals, 87 (17%) were from education and research hospitals, and only 2 (1%) were from public and private hospitals.

## DISCUSSION

According to the evaluation of endocrine surgery publications made so far, it is obvious that the experience of general surgeons in Turkey have contributed to world science. Especially since 2002, with the increasing number of publications in the field of endocrine surgery, the significance of Turkey in the international arena in the field of endocrine surgery is increasing. Nevertheless, as compared to many European countries and the United States (US), our country is unsatisfactory in terms of endocrine surgery articles produced.

Unfortunately, there are no national or international assessments unique for endocrine surgery. Therefore, studies on general surgery or other specialties will be taken into consideration. From the UK, Phillips et al. (2) evaluated publications in 10 general surgery journals with the highest impact factors, between 1.2 and 7.9. They classified these manuscripts according to their origin as US, Japan, Europe, UK and others, and compared the number of publications between 1987 and 2009. It was estimated that the low number of European publications may have changed the overall profile of the operations performed in the UK. They summarized the causes of academic decline as follows; lack of infrastructure, trained personnel and funding, ethical problems and bureaucratic difficulties. They also noted that low participation of British surgeons on journal editorial boards may also have an effect (2). Similarly, in another study from the UK on Anesthesiology and Reanimation, there was a significant annual decline in publications from the UK, despite an increase in the number of studies from other parts of the world between

Table 1. Publications according to journals

Journal name	Number of articles	Impact factor
Surg Today	35	1.224
Int J Surg	27	1.293
Acta Chir Belg	22	0.432
World J Surg	21	2.362
Thyroid	17	4.792
Am J Surg	16	2.776
Endocr Regul	12	1.868
Endocrine	10	1.416
Surgery	10	3.103
Transplant Proc	10	1.005
Endocr J	9	3.548
Langenbecks Arch Surg	9	1.807
ANZ J Surg	8	1.248
Saudi Med J	8	0.520
Arch Surg	7	4.239
Bratisl Lek Listy	6	0.400
Adv Surg	5	1.400
Ann Surg	5	7.492
Br J Surg	5	4.606
Eur J Surg	5	2.550
Ulus Travma Acil Cerrahi Derg	5	0.500
Turk J Gastroenterol	5	0.470

1997-2006. Although similar to our study design, in that study, articles on anesthesia from North America, Japan and Europe were compared to those from the UK (7). However, only the number of publications was taken into account in that study, without assessment of impact factors.

Alexander et al. (2) evaluated the publications from all over the world between the years 1987-2009 on 'General Surgery'. In this study, only the term "thyroidectomy" was included in relation to endocrine surgery. A total of 4871 studies on thyroidectomy were identified, the contribution rate of countries in decreasing order were as follows: the United States 1000 (20.5%) publications, Germany 550 (11.2%), Italy 540 (11%), Japan 380 (7.8%) and France 370 (7.5%) publications. Applying this study period to our study revealed 175 articles on 'thyroidectomy' published from Turkey.

Although we have made academic progress in our country in endocrine surgery in the last 10 years, the issue outlined above remains true for our country as well. According to the data from 'Clinicaltrials.gov', which is an international platform tracking clinical trials, although we are the country with most published studies located in the Middle East region, the contribution of our country to science is only 1% (5, 8). However, when examined over the years, there is an average annual increase in the number of articles at a rate of 1%. According to conference notes by Yıldırım (9), when clinical studies per-

formed in our country are analyzed according to sub-specialties, General Surgery ranks # 10 within 25 divisions. According to the scientific search engine ISI Web of Science June 2012 data, general surgery ranks first with 1320 articles within publications from our country in 2011 (10).

The British Gastroenterology Association evaluated the rate of publications that were derived from studies accepted by the group as presentations according to years between 1994-2002, and found a decrease in the rate of publications. However, it was found that over the years, the articles were published in journals with higher impact factors. As a result, since the number of published articles decreased they concluded that academic success decreased in this area (11).

Barton from England accessed abstracts and full texts of 4000 articles from six databases between 2005 and 2007, and interpreted the implications of researchers and educators on academic training for future development. They determined that there was a crisis in medicine academically, in not only the UK but also the whole world. Interestingly, although statistically significant resources are being allocated for medical research all over the world, most of the study results are pre-drawn; quantitative studies are conducted more, and data reliability is low (12). This study, the first of its kind in Turkey to our information, has a number of limitations. Although articles were classified and evaluated according to organ, annual distribution, journal impact factor and hospitals, lack of classification according to types of studies as original article, review, case reports, technical notes and letters to the editor is one of the limitations of this study. Another point is that, even though a large-scale search was carried out, it is possible that some studies of interest to this study may be left out. In order to overcome missing journals that are included in peer-reviewed international indexes not included in PubMed, announcements have been made through our society's website.

## CONCLUSION

When endocrine surgery publications are evaluated, an increasing number of publications are detected especially since 2002, which in turn results in an increasing significance of Turkey in the international arena in endocrine surgery due to the current acceleration. However, the decrease in the number of published studies and being published in journals with low impact factor since 2010 is important. We believe that this study can inspire for similar evaluations in other areas of surgery to depict a scientific profile on this issue for Turkey.

**Ethics Committee Approval:** Ethics committee approval was not received since the study did not use any experimental or patient data.

**Peer-review:** Externally peer-reviewed.

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