

Trends and development of research on diabetes mellitus and osseo integration through its literature

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Introduction

Diabetes mellitus is a prevalent medical disorder. The use of dental implants in patients with diabetes mellitus remains controversial because altered bone healing around implants has been reported .

Literature currently suggests that successful treatment results can be attained when placing implants on carefully selected patients with glycosylated hemoglobin levels (HbA1C) less than 8 percent and with possible prophylactic antibiotic administration that is to say that subjects with well-controlled diabetes may not be significantly compromised and can have high dental implant success rates compared to individuals with poorly controlled diabetes.

There are many bibliometric studies regarding topics, journals, but there are few bibliometric studies in the dental field and less on specific topics .

Objective

•The purpose of this study is to analyse the evolution of research on diabetes mellitus and osseointegration in dental implants through co-word and co-citation analysis.

Method

The search was independently performed by two researchers. In order to cover the available scientific literature the search was performed in the topic field, which runs the search titles, keywords and abstracts. In this investigation as in other studies like Gil-Montoya 12 (2006), Sanz Casado E14 (2007), the results were discussed by dentists and expert in other fields and thus benefit from the methodology of different criteria, selection of the source of information used; formulation of the search strategy, including the definition of the search terms based on MeSH headings; selection of types of papers to be covered in the study. This co-operation is essential to minimize the criticism often leveled at bibliometric “mapping” with respect to the results15,16.

The search strategy used was: (Osseointegrat* OR “dental implant*”) AND “diabetes mellitus”. Data was retrieved on February 7th, 2011. This query recovers documents which contain in the above mentioned bibliographic fields concepts such as, dental implants, osseointegration, diabetes mellitus, dental implantation, etc. After the search, manual review of each document was performed in order to eliminate any documents unrelated to the subject.

Firstly, a descriptive analysis of research production (numbers of papers, type of documents and relation with country) was conducted. The latter was obtained through the affiliation field captured from the bibliographic data. These statistical analyses were run with Microsoft Excel 2003.

Secondly, a co-word analysis was performed

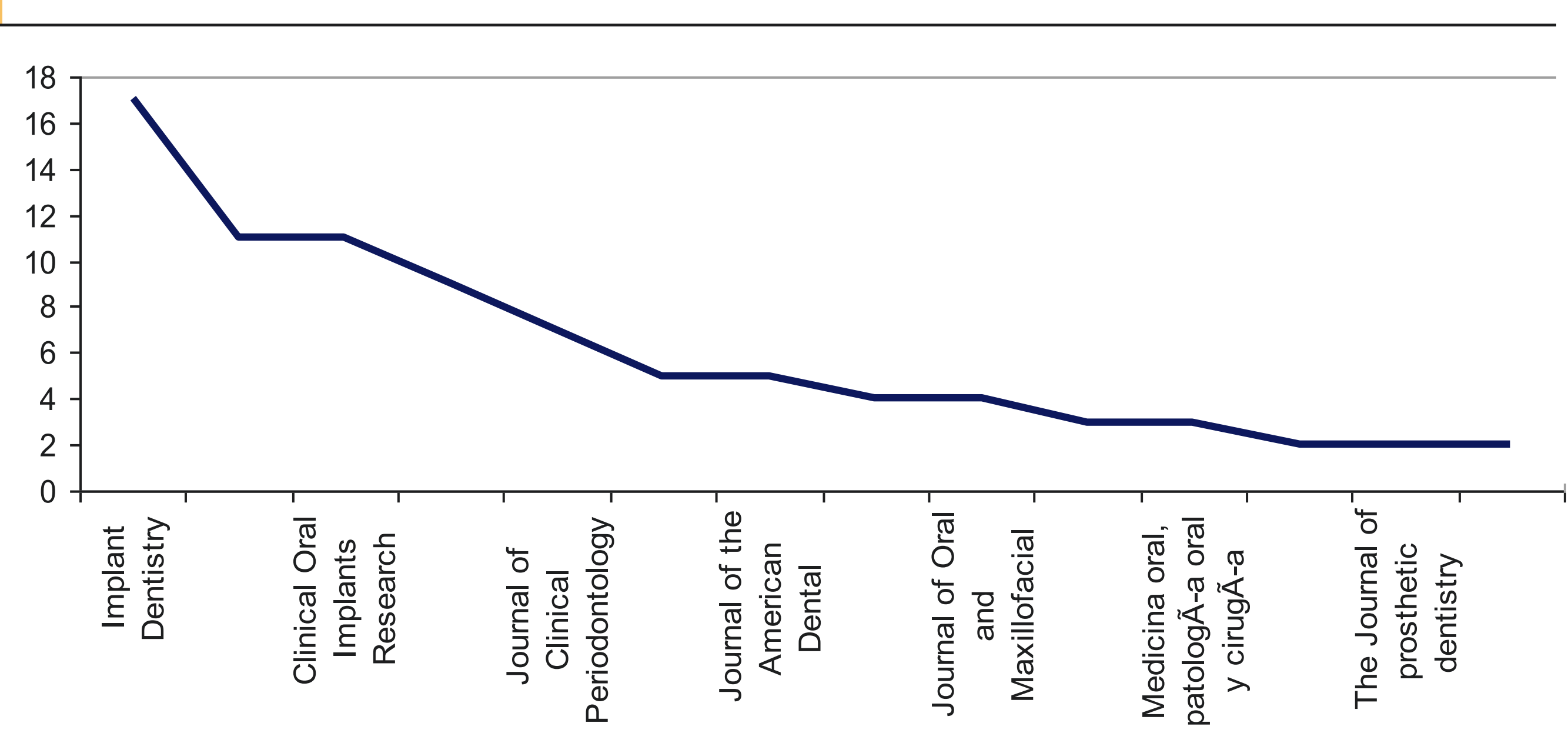


Fig. 1. Papers distribution by journals

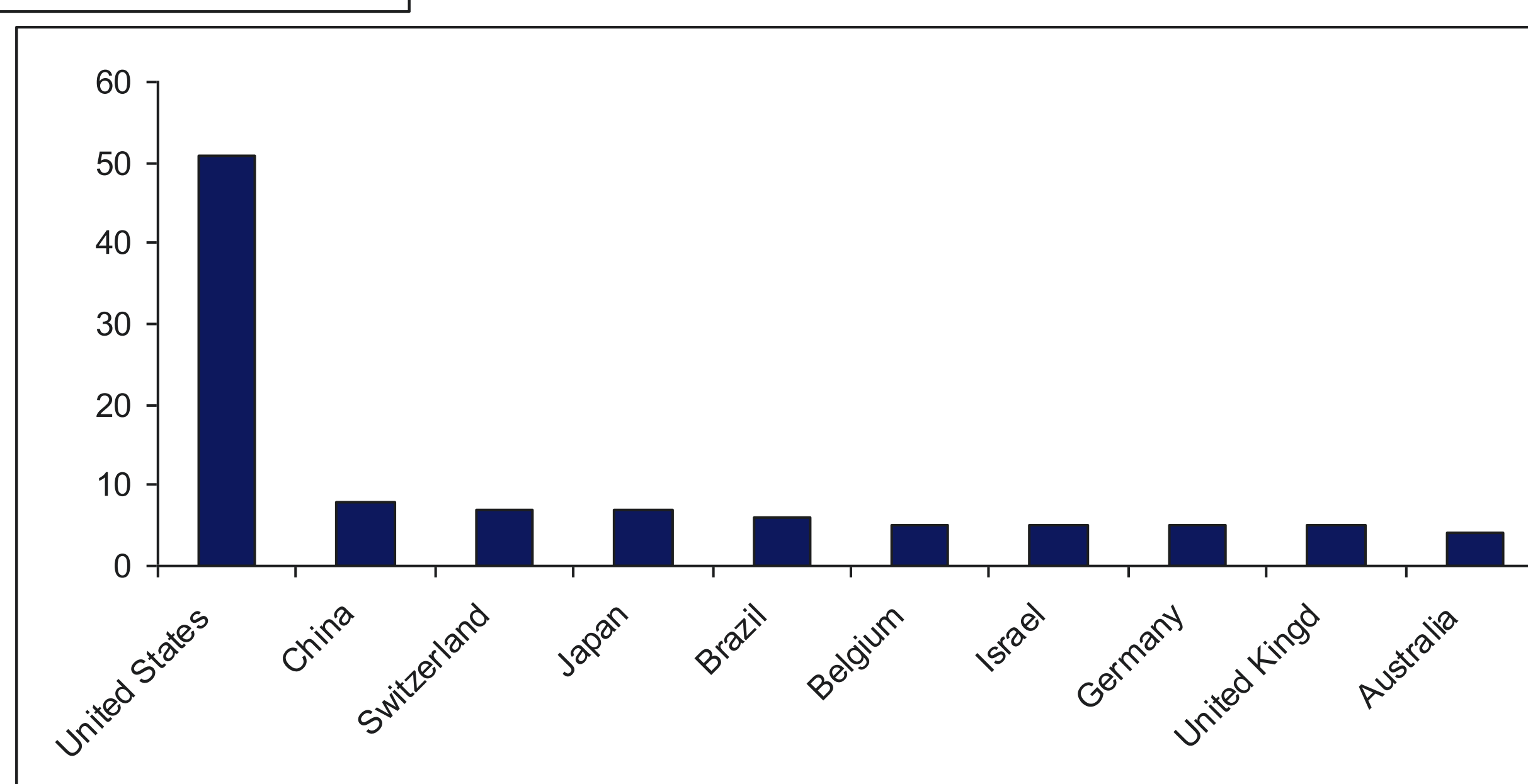


Fig. 2. The most productive countries

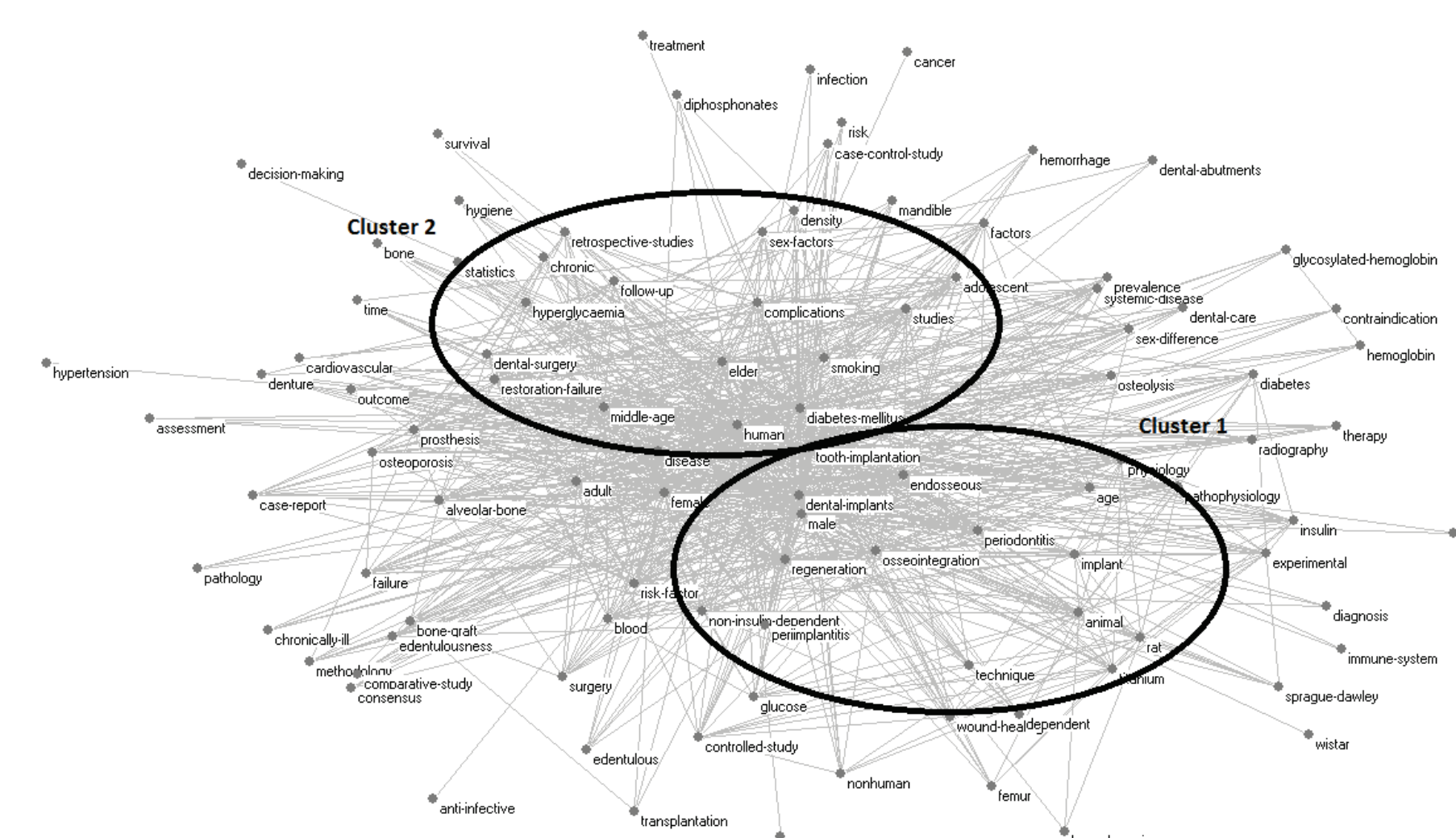


Fig. 4 Cluster of words and co-words (from 2005 sub-period)

Results

1. Scientific production

A total of 135 papers were retrieved from Scopus, unlike PubMed, which retrieved 42 papers only using the same search strategy.

2. Journals (Fig. 1)

2. Geographic distribution of scientific production (Fig. 2)

3. Map of words and co-words in contexts (Fig. 3 y 4)

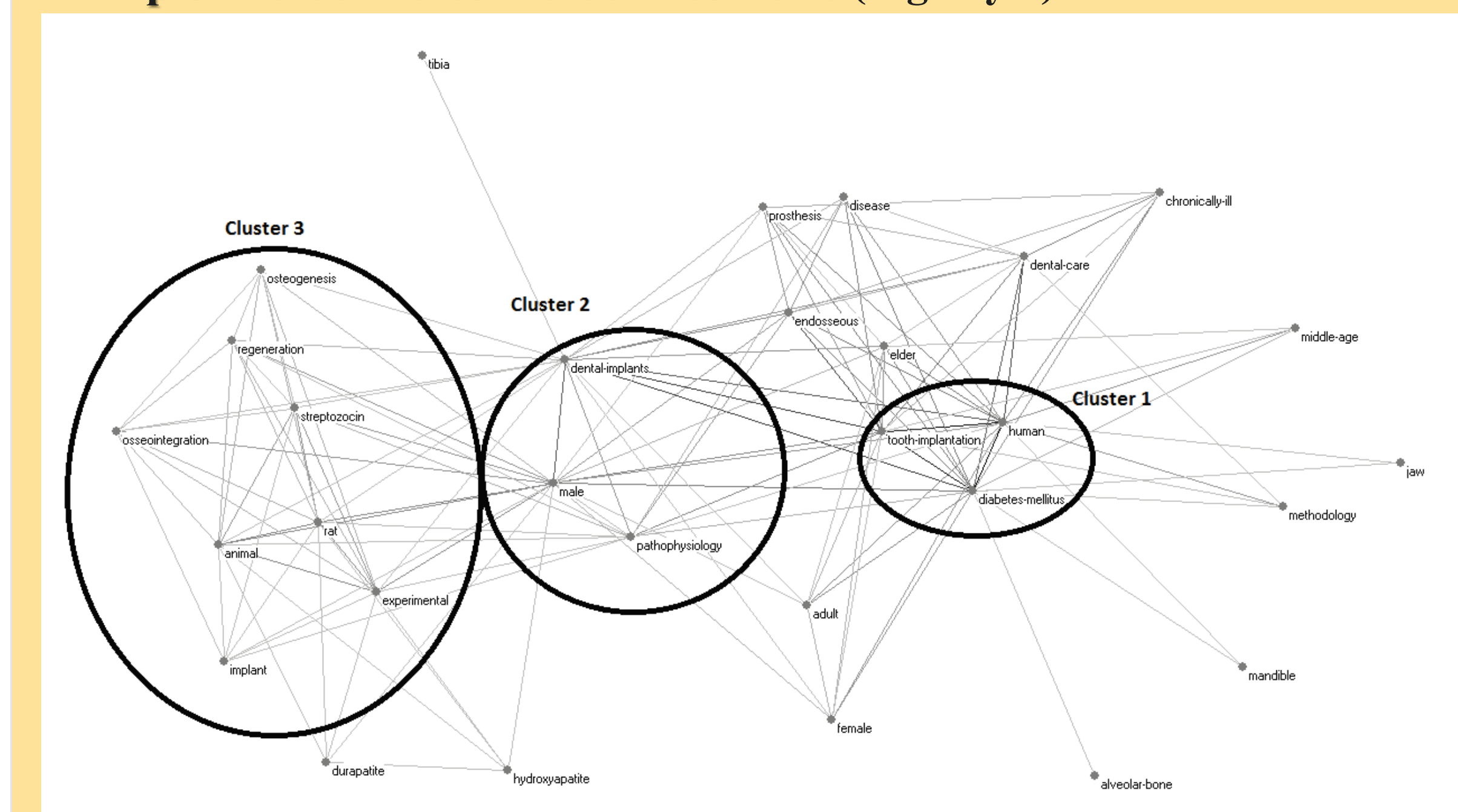


Fig. 3. Cluster of words and co-words (before 2000 sub-period)

Conclusions

Significant growth is observed in scientific production since 2007 and particularly in the period 2007–2014. The countries found to have the highest output are United States, United Kingdom, China, Switzerland and Germany. Authors collaboration networks show that research groups are forming around this subject matter. The bibliometric maps showed an increase in the publishing activity in the last periods and subjects like tooth-implantation, dental-implants and diabetes mellitus were the most productive.

References

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