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Letters

Oral cancer: estimate (INCA) versus incidence (SUS via TabNet) in Brazilian capitals

Câncer bucal: estimativa (INCA) versus incidência (SUS via TabNet) nas capitais do Brasil

Marco Túllio Brazão Silva[1], Luana Samila Aragão Ramos[2], Edson da Silva Gusmão[3], Christine Mendes Silveira[4]

Dear Editor and readers, oral cancer is a disease that impacts nationally among the fifteen most common types of câncer. The National Cancer Institute (INCA) represents the official Brazilian organization for providing this data through the Statistical Estimates of Cancer, published with the support of Population-Based Cancer Registries (RCBP) situated in more than 20 regions of Brazil for this purpose[1,2]. Parallely, in recent times, there has been expansion and integration of SUS (Brazil's unified health system) data sources, opening up perspectives for establishing cancer incidence rates. The TabNet[3] tool was made available for universal access in 2019 and would have this potential. This free accessible system includes the following SUS tools: Ambulatory Information System (SAI), Individualized Ambulatory Production Bulletin (BPA-I), High Complexity Procedure Authorization (APAC) from the Hospital Information System (SIH), and the Information System of Cancer (SISCAN). Researchers already consider this platform as "a management tool"[4], with the especial function of determining the time interval between diagnosis and the first cancer treatment. In 2020, in this journal, the paper "Perspectives of the oral cancer's epidemiological panorama in Brazil" were published through consultations in the SIH database, that representes just one of the various sources integrated by TabNet[5]. Other authors have been using TabNet to create local epidemiological bulletins[6].

From this perspective we have written for editor and readers of the "Revista de Medicina", thus raising the prospect of important reflections on public sources of oral cancer statistics: there is a compatibility between estimation (carried out by INCA) and incidence (data from TabNet) of oral cancer according to official public access data of Brazil?

CONSULTATION METHODS OF THE ORAL CANCER STATISTICS

Here we have a documentary research to study the possibilities of obtaining publicly accessible statistics on oral câncer of Brazil. The research parameters were the Estimate/2020 Cancer Incidence in Brazil[1], which represents the estimate for the 2020/2021/2022 triennium, and TabNet research data for the year 2022 in addition to the partial result of an on-site survey carried out by the authors, both explained further.

The INCA estimate of cancers is quickly accessible through its booklet and online tables. For the consultation on TabNet, representing here the incidence data, national capitals were chosen comparable data to this INCA estimate. The consultations of TabNet were done as follows: the identifier "municipality of diagnosis" was selected in the "line" tab; the "column" tab remained "does not active"; in the "measurements" tab, select "cases; in the "available periods" tab, the year 2022; within the "available selections" tabs, the query was carried out considering three variations: "municipality of residence", "municipality of diagnosis", and "municipality of treatment". Each national capital was consulted individually in this regard. In the "detailed diagnosis" selection,

1. PhD, professor de Semiologia e Anatomia Patológica no curso de Odontologia da Universidade Estadual de Montes Claros (UNIMONTES), Minas Gerais, Brasil. marcotullio@gmail.com
2. Acadêmica do curso de Odontologia da Universidade Estadual de Montes Claros (UNIMONTES), Minas Gerais, Brasil. luanasamila@gmail.com
3. MD, professor de Anatomia Patológica no curso de Medicina da Universidade Estadual de Montes Claros (UNIMONTES), Minas Gerais, Brasil. esgusmao@gmail.com
4. MD, médica patologista no Hospital Universitário Clemente de Faria, da Universidade Estadual de Montes Claros (UNIMONTES), Minas Gerais, Brasil.

C00 to C10 was selected, seeking to understand oral cavity cancer according to INCA. Each search ends by clicking the "show" button (Figure 1A). The data released was updated in a search on August 10, 2023, on TabNet and is shown in Table 1.

As a complementary parameter, as already mentioned, we bring here a partial result of the epidemiological survey of oral cancer in progress in the city of Montes Claros (Minas Gerais), Brazil, which represents a reference center for health in the north of Minas Gerais, collected by State University of Montes Claros (resolution CEPEX/UNIMONTES no. 17/2022) and which has the support of all pathology laboratories in the city for an on-site survey of the number of histopathological reports issued regarding oral cancer in the city. This statistic cannot be compared with INCA data, but can be compared to TabNet data for the city.

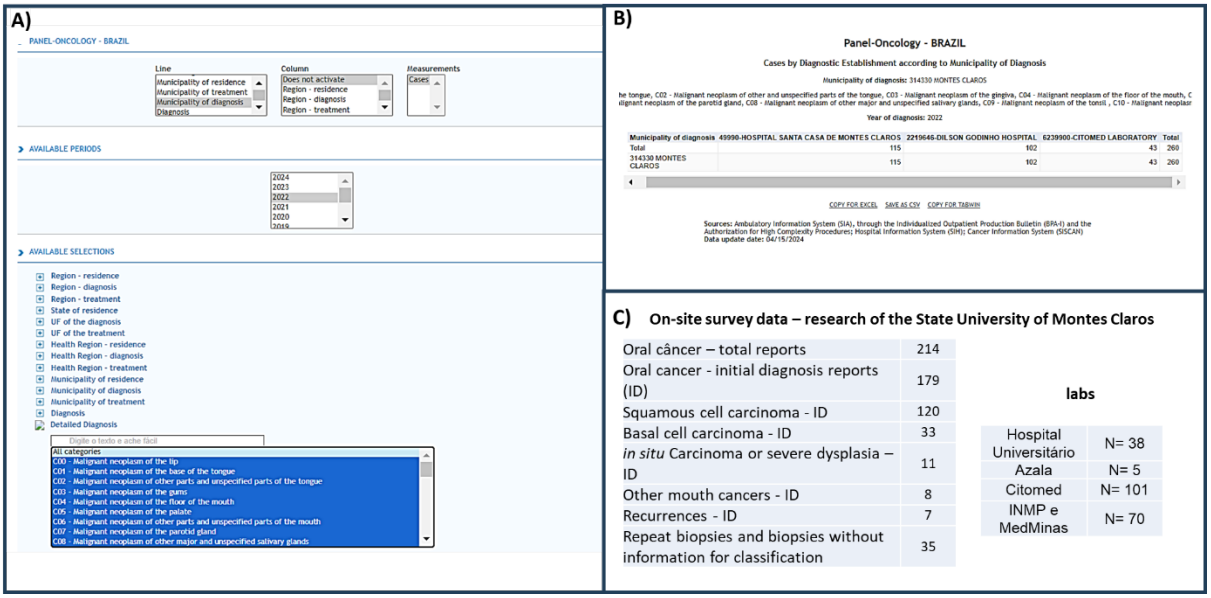

Figure 1 - Sources of oral cancer statistics. A: Searching layout used in TabNet. B: data obtained according to the establishment of diagnosis by TabNet for the city of Montes Claros (MG). C: data obtained through on-site research at pathology laboratories in the Montes Claros's city – note that the diagnostic establishment reported in TabNet does not correspond to the on-site research

Table 1 - Comparison between INCA statistics and data from the Oncology Panel for the incidence of oral cancer diagnoses among national capitals via TabNet. Note: Own preparation - research result

Region of Brazil	National Capitals	INCA*	Oncology Panel - TabNet		
			Municipality of residence	Municipality of diagnosis	Municipality of treatment
Nordeste	São Luís (MA)	40	76	215	182
	Salvador (BA)	190	241	680	566
	Fortaleza (CE)	150	325	668	518
	Natal (RN)	60	196	519	310
	Recife (PE)	120	184	680	343
	Teresina (PI)	**50**	57 ≈	170	126
	Maceió (AL)	**60**	89 ↓	150	104
	Aracaju (SE)	50	35 ↓	139	127
	João Pessoa (PB)	90	57 ↓	174	144
Norte	Porto Velho (RO)	20	39	100	72
	Belém (PA)	60	238	398	87
	Palmas (TO)	**20**	16 ≈	40	40
	Rio Branco (AC)	**20**	17 ≈	13 ↓	13 ↓
	Boa Vista (RR)	**20**	16 ≈	9 ↓	2 ↓
	Manaus (AM)	160	97 ↓	104 ↓	91 ↓
	Macapá (AP)	20	13 ↓	9 ↓	7 ↓

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Region of Brazil	National Capitals	INCA*	Oncology Panel - TabNet		
			Municipality of residence	Municipality of diagnosis	Municipality of treatment
Centro-Oeste	Cuiabá (MT)	20	54	199	186
	Goiânia (GO)	80	127	423	350
	Brasília (DF)	**150**	120 ≈	143 =	133 ≈
	Campo Grande (MS)	**80**	89 ≈	149	92 ≈
Sudeste	Belo Horizonte (MG)	220	318	799	486
	Rio de Janeiro (RJ)	**630**	393	683 ≈	380 ↓
	São Paulo (SP)	**690**	647 =	855	539 ↓
	Vitória (ES)	**30**	34 ≈	311	249
Sul	Curitiba (PR)	100	249	386	273
	Porto Alegre (RS)	70	430	783	238
	Florianópolis (SC)	**30**	30 =	107	76

* in bold, data considered compatible in the comparison between INCA estimate and TabNet incidence for 2022. Comparative symbols were used to highlight similarity or not: = for identical estimates or with a discrepancy of up to 10%; ≈ for differences between 10-20%; ↓ for incidences lower than estimated. The data entered in the table was updated in a search on April 13, 2024 on TabNet.

RESULTS AND DISCUSSION: DOES THE ESTIMATE CORRESPOND TO THE INCIDENCE?

There was an incompatibility between the INCA estimate (2020-2022) and the TabNet incidence for most national capitals (Table I). In other words, there was incompatibility for 16 (59%) among the 27 capitals in Brazil. Compatibility was considered here as a difference obtained of up to 20% between estimate and incidence, which occurred for: 1 of 9 capitals in the Northeast (Teresina), 3 of 7 capitals in the North (Palmas, Rio Branco and Boa Vista), 2 of 4 from the Central-West (Campo Grande), 3 out of 4 from the Southeast (Rio de Janeiro, São Paulo and Vitória), and 1 out of 3 from the South (Florianópolis). The "municipality of residence" is the TabNet criterion with the greatest possibility of compatibility.

The number of cases of oral cancer in the on-site survey carried out for Montes Claros (MG) (No. 179) was closer to the INCA estimate for the capital of MG - which is Belo Horizonte (No. 220) - in the year 2022 than for the incidence consultation using the specific TabNet to the city (No. 260) – which is considerably smaller in population. Figure 1 also shows the diversity of diagnoses grouped as "oral câncer" here in this on-site survey, however, it is unknown whether all these diagnostic entities are added together in the statistics of comparison (INCA and TabNet). In the opinion of this group, they should be because they are malignant neoplasms. Furthermore, it points out that only one of the diagnostic laboratories that we catalog in the city is recognized as a diagnostic establishment in TabNet, comparing data from Figure 1 B with Figure 1 C.

FINAL REFLECTIONS ON OFFICIAL ORAL CANCER STATISTICS

This text highlights discrepancies in the incidence of oral cancer through searches in the TabNet system concerning that estimated by INCA for most capitals, with a a tendence of subestimation. It makes it possible to question whether the INCA Estimate should include calculations to describe a margin of error or confidence interval for the estimated numbers. Furthermore, questioning whether it is correct to use TabNet as a tool to investigate the incidence of cancers for the present, highlighting that these are continuous updating data, and thus allow changes in statistics at each consultation.

It is important to reflect on the results of the comparisons made here. This will help to identify any erroneous parameters related to the incidence of oral cancer in Brazil. Such reflections can provoke necessary adjustments or changes and encourage debates of researchers and health system managers about this issue. Therefore, it is essential to raise an "alert" regarding this matter:

1- Overestimated statistics in reference cities: pathology laboratories at educational institutions and many private laboratories do not publish diagnoses in the SIS (or other pertinent SUS systems), generating discrepancies as shown in figures 1B and 1C. In theory, the municipality of origin and day of diagnosis could be retrieved in treatment centers (surgery, chemotherapy, or radiotherapy) during registrations in APAC. However, some centers redo the anatomy pathology, making possible equivocated information into the SIS (which is used in TabNet) as the location of the diagnosis as it could be the only diagnostic information included in systems before the treatment. Further, there are informal reports of patients who declare the addresses of relatives or friends living close to these large centers to avoid visiting small health centers before receiving treatment recommendations, thus gaining speed on the path to therapy.

2- Statistical flaws in controlling duplicates: some cases generate more than one histopathological report on the same date,

either due to the larger size of the surgical specimen or multiple biopsies (e.g. initial evaluation of different locations in a large lesion). There are cases involving separated lesions in more than one oral topography which could be understood as separate cases. Further, there are cases of second primary tumors and recurrences. In other words, do the statistics exclude what is treatment reports/expansion of margins and count the new incidences of oral cancer in the same patient?

3- Inaccuracy of diagnoses included in the oral cancer group: INCA estimates exclude "non-melanoma skin" tumors from their numbers. This excludes basal cell carcinoma, which may affect the lip skin. No information was found on whether or not TabNet accounts for such cases. What about diagnostic reports concluding in situ carcinoma (or Bowen's disease as described by some) and superficially invasive carcinoma, as they are considered in these statistics?

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