DISPENSING PATTERNS FOR RABIES IN HUMANS: A SOUTH AFRICAN DATABASE ANALYSIS

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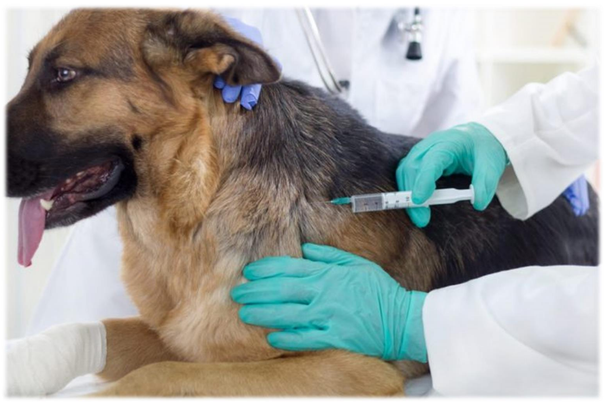


(Source: https://sasmallholder.co.za/2021/09/28/rabies-in-south-africa/)

BACKGROUND

Approximately 59 000 deaths occur annually worldwide due to rabies in humans.[1] Rabies is endemic in South Africa.[2] A study by Weyer and others[2] on the epidemiology of human rabies in South Africa from 2008 to 2018 revealed that an average of 10 laboratory-confirmed cases are reported annually, with more than 50% younger than nine years of age. In 2021, 19 human cases were confirmed.[3]

Rabies is a fatal but preventable infection and a human case of rabies is a failure of the health care system.[4] The rabies virus spreads via peripheral nerves to the central nervous system causing a fatal encephalitis once symptoms develop.[1] Rabies can be prevented through the administration of post-exposure prophylaxis (PEP), which following thorough wound washing, includes the administration of the rabies vaccine with or without the addition of the rabies immunoglobulin (RIG).[1]

There has been a notable increase in the number of human rabies cases in South Africa in 2021. A study on the dispensing patterns of medicine for rabies in 2020 can serve as a baseline for further studies to be conducted in subsequent years.

PRIMARY AIM

The primary aim of the study was to determine the prescribing patters for medicines dispensed for, or related to, rabies in Anatomical Therapeutic Chemical (ATC) group J06 and J07 in 2020 utilising an electronic dispensing database.

METHODOLOGY

- A retrospective drug utilisation study on electronic medicine records obtained from a medical insurance scheme administrator in South Africa for 2020 was conducted. The database represents a section of the private healthcare sector in South Africa. The database contained more than 2.6 million records for 2020.
- The ATC Classification System[5], Monthly Index of Medical Specialities (MIMS)[6] and the South African Medicines Formulary[7] were used to classify medicines.
- All products in Anatomical Therapeutic Chemical (ATC) group J07 (vaccines)[5] were extracted and analysed. Only the products that were claimed and reimbursed by the different medical insurance schemes were included in the study.
- Each medication record contained information on the age and gender of the patient, with a unique number to identify each patient, date of the prescription, detailed information on the dispensed drug (name, package size, formulation, strength and quantity) and cost.
- Microsoft Access® and Excel® were used to analyse the data. Descriptive statistics were calculated.
- Limitations included that the study only covered a period of one year. No clinical information or diagnoses were available.
- Ethical approval to conduct studies on electronic databases was obtained from the Research Ethics Committee (Human) of the university (ethics clearance number: H08-HEA-PHA-005).

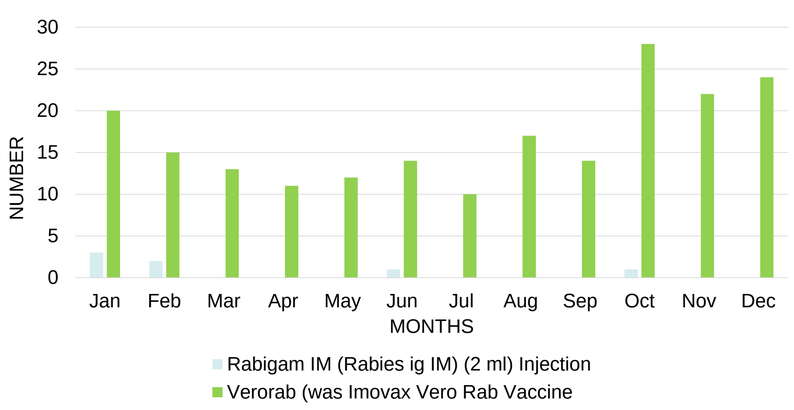
RESULTS AND DISCUSSION

General dispensing for rabies in ATC groups J06 and J07

A total of 174 products in ATC Group J06 (Immune sera and immunoglobulins) were dispensed by the medical insurance scheme to 57 patients, and 7 066 vaccines in ATC Group J07 (Vaccines) to 5 250 patients.

Of these, 200 vaccines for the inactivated, whole virus rabies vaccine (J07BG01) were dispensed to 80 patients and seven (7) products for the rabies immunoglobulin to seven (7) patients. The amount claimed for these products was R123 921.23. The dispensing patterns for these products over the 12 month period is shown in Figure 1.

FIGURE 1
DISPENSING PATTERNS OF RABIES VACCINE AND RABIES IMMUNOGLOBULIN OVER THE 12 MONTH PERIOD



Dispensing peaked in January 2020 and increased again towards the end of the year (October to December 2020). Most prescriptions originated in the North-West and Gauteng provinces of South Africa, with four other provinces also affected. For 23.67% of the prescriptions, the province was unfortunately not recorded. Previously, cases of rabies in domestic dogs have been reported mainly (but not exclusively) in areas in the eastern half of South Africa including locations in the Eastern Cape, KwaZulu-Natal, Limpopo and Mpumalanga provinces. However, the 2021 and 2022 outbreak in the Eastern Cape province is regarded as unprecedented.[4]

Age and gender distribution of patients

The age and gender distribution of the 81 patients is given in Figure 2. The average age of the 81 patients was 32.54 (SD=18.80) years, with 71.60% males. Six of the seven patients (4 males) who received the rabies immunoglobulin, also received the rabies vaccine.

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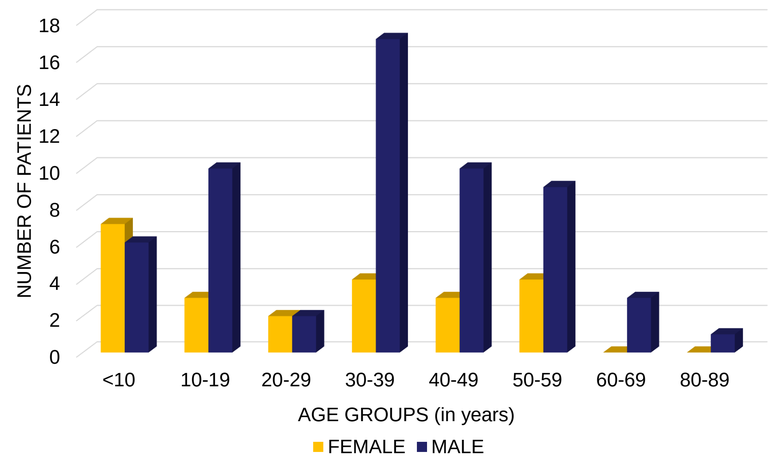
FIGURE 2
AGE AND GENDER DISTRIBUTION OF PATIENTS (n=81)



CONCLUSION AND RECOMMENDATIONS

- In a study on the dispensing records of 337 community pharmacy in South African in 2015[8], 310 rabies vaccines were dispensed. Limited drug utilisation studies on rabies in south Africa are available. Such studies can, however, provide an insight into the treatment of rabies in South Africa.
- There was a rabies outbreak in several provinces of South Arica towards the end of 2020 and during 2021.[4] Further studies can provide insight into the pharmacoepidemiology of rabies in the region.
- Since rabies can be controlled in animals through rabies vaccination, it is important for all health care workers to also promote rabies vaccination to the owners of domestic animals.

ACKNOWLEDGEMENTS

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