

había co-secreción hormonal, lo que ha ocurrido en algunos casos⁴.

En cuanto al seguimiento, se recomienda en los TNE G1/G2, la realización de pruebas de imagen cada 3-6 meses y en los G3, cada 2-3 meses⁷. Además, el seguimiento debe ser de por vida, aunque estos intervalos pueden ampliarse a 1-2 años con el aumento del seguimiento⁷. Respecto a las pruebas de imagen para receptores de somatostatina (octreoscan/PET con galio), se recomienda su realización a los 12-36 meses si se demostró sobreexpresión por imagen en el tumor primario⁷. Estas pautas se llevaron a cabo en este paciente, detectándose en la analítica una hipercalcemia que puso en alerta la posibilidad de recidiva. De forma habitual se suele utilizar la CgA, también la ENE, esta última útil sobre todo en G2 y G3 con niveles de CgA normales⁷. Pero en este caso, ambos valores eran normales. No existen recomendaciones actualmente en casos similares al nuestro, debido a su excepcionalidad, pero lo que sí que hay que resaltar es la importancia del seguimiento a largo plazo en estos pacientes, integrando los niveles de calcio sérico en las peticiones analíticas.

Como conclusión, es importante el diagnóstico precoz de los TNEp asociados a hipercalcemia mediada por PTHrP, ya que suelen ser más agresivos. Por ello, ante un caso de una hipercalcemia y descartadas las causas más frecuentes, se debe llevar a cabo un estudio dirigido, pues el diagnóstico precoz permite mejorar el pronóstico de estos pacientes. Tras la cirugía, debe realizarse un seguimiento a largo plazo, y la monitorización del calcio sérico puede ser útil para el diagnóstico precoz de la recidiva.

Consideraciones éticas

Se obtuvo el consentimiento informado de todos los participantes individuales incluidos en el estudio.

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Concern about hypoglycaemia is mainly nocturnal: An infodemiology study

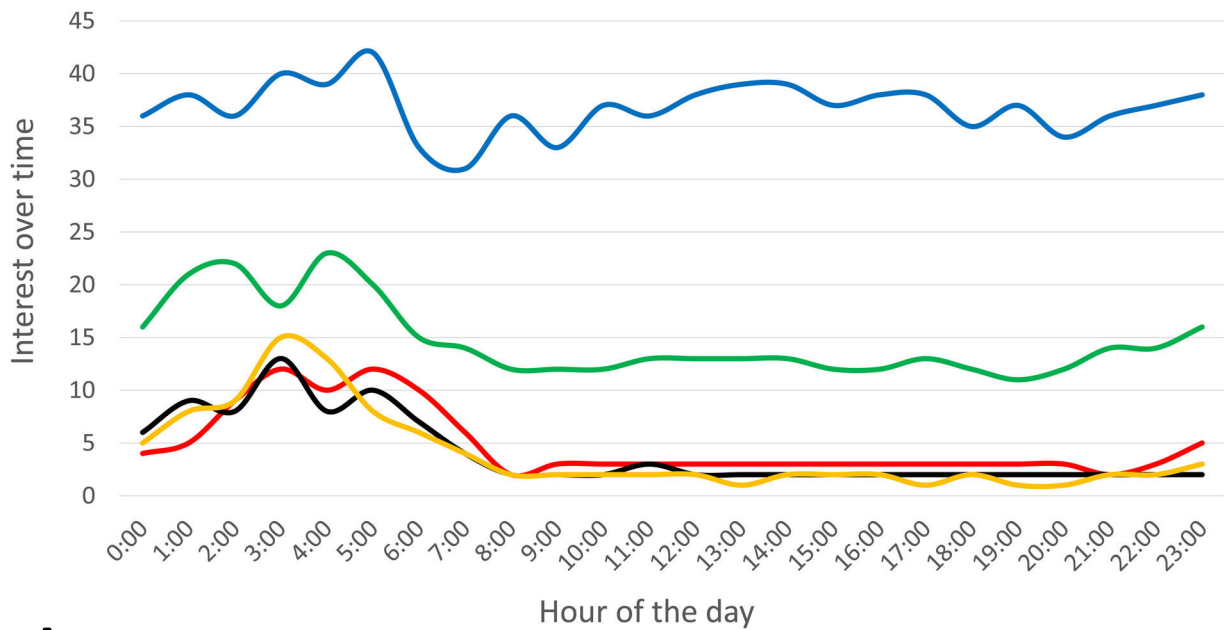
La preocupación por la hipoglucemia es principalmente nocturna: un estudio de infodemiología

Dear Editor,

Hypoglycaemia is associated with long-term negative consequences in people with diabetes, such as an increase in

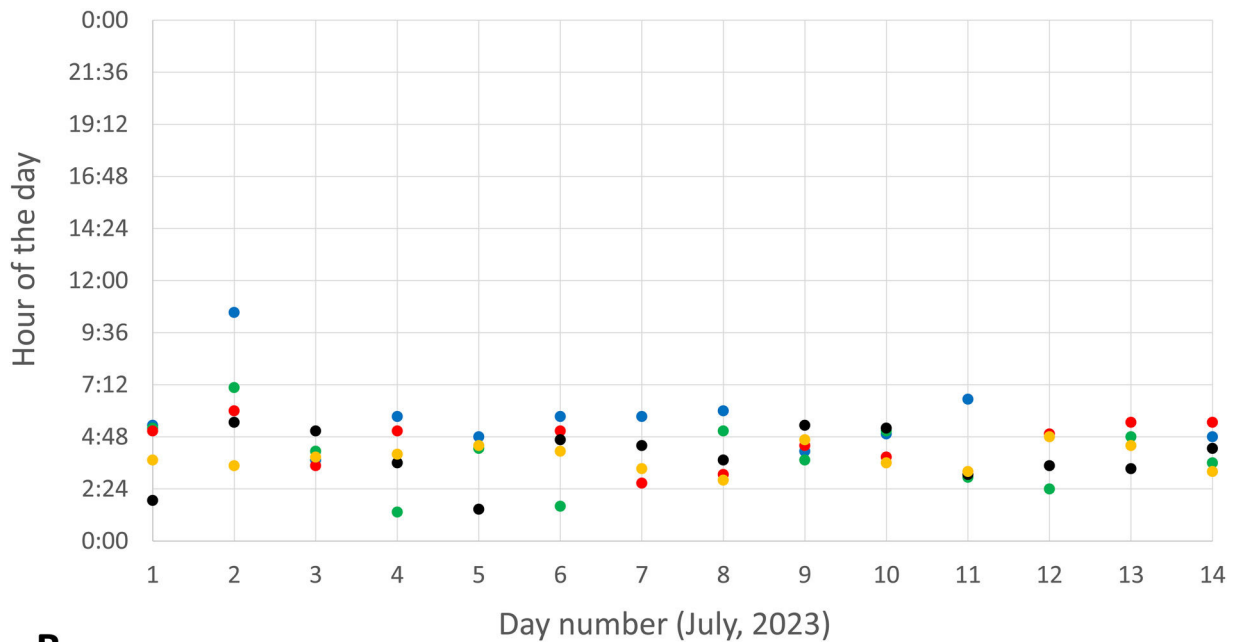


glycaemic variability and a higher risk of mortality.¹ A hypoglycaemic episode can involve acute symptoms, such as irritability, shakiness, tachycardia and confusion, which can progress to loss of consciousness, seizure, coma or death.¹ Considering the unpleasant symptoms that can accompany hypoglycaemia and its potential short- and long-term risks, it can often lead to anxiety and fear in people with diabetes,^{2,3} leading to a reduction in their quality of life.^{2,4} Nocturnal hypoglycaemia is common in patients with diabetes, given that almost 50% of all episodes of severe hypoglycaemia occur during sleep.⁵ Thus, nocturnal hypoglycaemia can affect sleep quality.^{2,6}



A

— United States — Brazil — Spain — United Kingdom — Australia



B

• United States • Brazil • Spain • United Kingdom • Australia

Figure 1 Google Trends interest in hypoglycaemia. (A) (upper panel): mean Google Trends interest in hypoglycaemia during the day for 14 consecutive days in the five countries studied. Interest score, plotted on the y-axis, does not represent an absolute volume of number of searches. For every time period, Google Trends presents data normalised on a scale from 0 to 100 points. The eight-minute period of greatest interest each day is given 100 points. The rest of the day’s points are calculated by taking the time of greatest interest as a reference. For instance, if the time of greatest interest one day (100 points) got 10 Google searches, an eight-minute period at which Google received five searches would be given 50 points. Therefore, eight-minute periods with 0 searches are given 0 points. In this context, the interest score is usually directly proportional to the number of searches, which is also directly proportional to the population of each country. (B) (lower panel): dots represent the time of day with the maximum searches for every country in each of the 14 days.

Considering that people might tend to search the Internet about a topic whenever it comes to their minds or worries them, we thought that people with diabetes worldwide would probably search more often for “hypoglycaemia” at the time of day when they have the most episodes, or whenever those episodes are severe enough to cause concern. These data could provide indirect insight into the hourly worldwide awareness of hypoglycaemia, as studies exploring the global interest in hypoglycaemia are lacking.

Google is undoubtedly the most popular Internet search engine. Google Trends is a tool Google developed in 2006 that can provide an analysis of the popularity of Google searches across various regions over time, showing the size of a term’s search volume during every time period in the Internet’s history. Mainly since 2020, Google Trends has been used by the scientific community to analyse social interest in various subjects, focusing particularly on the COVID-19 pandemic.⁷ To our knowledge, there are only a few Google Trends-based studies on diabetes,⁷⁻⁹ none of which have targeted hypoglycaemia.

To analyse the time of day when the term “hypoglycaemia” was searched more frequently worldwide, we recorded day-by-day Google Trends data from five countries (United States, Brazil, Spain, United Kingdom and Australia) for 14 days (1–14 July 2023). So as to adapt this Google Trends search to the most spoken language of each country, the term was searched as “hypoglycemia” for the United States, as “hipoglicemia” for Brazil, as “hipoglucemia” for Spain, and as “hypoglycaemia” for the United Kingdom and Australia. Every search was adapted to each country’s capital city time zone. Search data were obtained for each country every eight minutes for the 14 days of the study. This allowed us to calculate an hour-by-hour average Google interest in hypoglycaemia across these countries during this period (Fig. 1A). As the figure shows, the time of day when most of the Google searches for “hypoglycaemia” occurred was at night (especially from 3 a.m. to 5 a.m.), which was common to all the five countries studied. The average interest score from 0.00 a.m. to 6.00 a.m. (night-time) was higher than the average interest score from 6.01 a.m. to 11.59 p.m. (daytime) in each and every country ($p < 0.01$ for every country, Student’s t -test). The mean hourly night-time interest score for all the five countries combined (17 points) was higher than the mean hourly daytime score (11 points; $p < 0.001$). The eight-minute time of day with the maximum searches in each country during each of these 14 days was also recorded, showing that the time of greatest interest in searching for hypoglycaemia was also at night (Fig. 1B). The same study was repeated two months later, with similar results (data not shown). Taken together, these results could reflect that the time of day with maximum interest in hypoglycaemia is at night, probably showing that people with diabetes tend to have more severe or worrying hypoglycaemic episodes at night, while sleeping.

The study has limitations to be acknowledged. In general, infodemiology studies are mainly conceived as hypothesis generators. We cannot guarantee that the reason a person is searching Google for hypoglycaemia is because they have diabetes or are experiencing a hypoglycaemic episode. Moreover, the entire population is not fully represented, given that some people might use other search engines and

some do not have access to the Internet. Neither Asian nor African countries were included due to their non-use of the Latin alphabet or little use of Google. Finally, the peak search time can be the one generally used, and it may be not restricted to hypoglycaemia. As a control, however, it can be observed that, when searching the words “breakfast”, “lunch” and “dinner” in the United States in Google Trends, the graphs displayed show that these words are searched more often at approximately 9 a.m., 12 p.m. and 6 p.m., respectively (Supplementary Figure 1).

Understanding patients’ feelings is an important aspect of managing diabetes.² Fear of hypoglycaemia at night is a particular concern.^{2,4-6} The data from the present study confirm the specific interest of the population in nocturnal hypoglycaemia. Understanding the complex interplay of emotions concerning hypoglycaemia can guide healthcare providers in improving clinical practice.²

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Conflicts of interest

None to declare.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at [doi:10.1016/j.endinu.2023.11.007](https://doi.org/10.1016/j.endinu.2023.11.007).

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Seudoaneurismas carotídeos tras cirugía endoscópica transesfenoidal por acromegalia



Carotid pseudoaneurysms after endoscopic transsphenoidal surgery for acromegaly

El desarrollo de pseudoaneurismas de arteria carótida interna (pACI) es una complicación vascular de la cirugía endoscópica endonasal transesfenoidal (EET), con una incidencia del 0,55-2%^{1,2}. Son lesiones que se componen únicamente de la capa vascular adventicia¹. La ausencia de un tratamiento adecuado puede resultar en consecuencias devastadoras, dado que presentan riesgo de crecimiento rápido y rotura, con una tasa de mortalidad del 30-50%¹⁻⁴. Aunque su manejo terapéutico es complejo, existen múltiples técnicas quirúrgicas y endovasculares para el mismo^{1,2}.

Presentamos el caso de una mujer de 71 años con diagnóstico incidental de acromegalia, asociada a un macroadenoma hipofisario (1,3 × 1,1 × 1,4 cm), Knosp 1, con extensión supraselar y contacto con el quiasma óptico. La paciente no presentaba alteraciones hormonales, salvo elevación de IGF-1. Se trató mediante EET asistido con doppler, con fresado selar hasta exposición de ambos senos cavernosos (SC), sin destechar las carótidas ni apertura de los SC. Se consiguió la exéresis macroscópicamente completa de la lesión, blanda, sin precisar especial manipulación en los límites laterales ni de las carótidas. No se identificó fístula de LCR. Se realizó cierre multicapa, sin precisar taponamiento nasal.

En el postoperatorio (p.o.) inmediato presentó sangrado nasal tras estornudar, precisando taponamiento anterior, retirado 48 h después. La paciente evolucionó favorablemente, siendo dada de alta en el 4.º día del p.o. Diez días después acudió por nuevos episodios de epistaxis en contexto de HTA. Se realizó revisión quirúrgica urgente, cauterizando un leve sangrado en *rescue flap* y en el cornete superior derecho.

Pese a dicha revisión la paciente presentó nueva epistaxis a los 3 días, que motivó nueva revisión quirúrgica, y ante la ausencia de sangrados que la justificaran, la realiza-

ción de un angio-TC (Fig. 1A) y posterior angiografía cerebral urgentes (Fig. 1B). Se objetivaron 2 imágenes compatibles con pseudoaneurismas de la carótida interna derecha. Se trataron mediante microcaterización de la carótida interna derecha distal a las lesiones aneurismáticas e implantación sin incidencias de dos endoprótesis derivadoras de flujo tipo Derivo® solapadas, cubriendo el cuello de ambas lesiones, sin complicaciones. La paciente fue dada de alta tras 48 h de observación con tratamiento de doble antiagregación (ticagrelor 90 mg/12 h y AAS 100 mg/24 h), sin nuevas complicaciones. Los controles a los 6 y 15 meses confirmaron la permeabilidad de los *stent* y la resolución de los pACI, persistiendo relleno del cuello del cavernoso, sin imágenes de hiperplasia significativa ni otras complicaciones (Fig. 1C y 1D), retirándose el tratamiento con ticagrelor. Actualmente mantiene cifras de IGF-1 dentro de la normalidad.

Como ocurre en el pACI medial del presente caso, el segmento más frecuentemente afectado es el cavernoso⁴. Incluso cuando existe una buena hemostasia intraoperatoria y ausencia de sospecha de lesión carotídea pueden aparecer lesiones diferidas, como los pACI o las fístulas carótidas-cavernosas^{3,5,6}. El manejo es complejo, y la ausencia de tratamiento adecuado puede resultar en consecuencias devastadoras, incluida la muerte^{1,6}. Las series clínicas informan de una tasa de rotura de los pACI de hasta un 60%¹.

Ante la sospecha de lesión vascular debe realizarse un estudio angiográfico inmediato, y si resulta negativo, repetirlo tras una semana para identificar la formación diferida de posibles pACI^{3,4,7}. La presentación con epistaxis diferida observada se describe en la literatura, con una incidencia del 0,6-3,3% (1-3 semanas tras la cirugía)^{6,8}.

Los factores de riesgo para la lesión vascular durante la EET son las variantes anatómicas óseas y vasculares, el desplazamiento de las ACI por la propia lesión o espacio intercarotídeo reducido, la invasión del SC por la lesión, los tratamientos con cirugía previa o radioterapia, y los abordajes expandidos a lesiones más complejas^{1,4,7,9}.

En este caso, destaca que uno de los pACI es de localización lateral, no directamente en contacto con la zona quirúrgica. En los pacientes con acromegalia se ha descrito