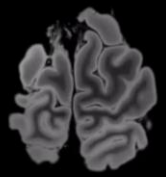

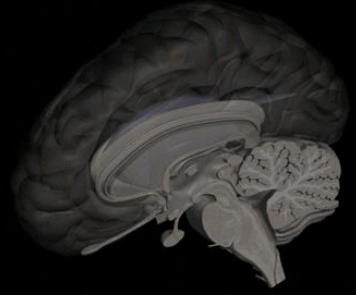

CEFALEA EN LA INFANCIA

DR. PATRICIO GUERRA
NEURÓLOGO INFANTIL Y ADOLESCENTES
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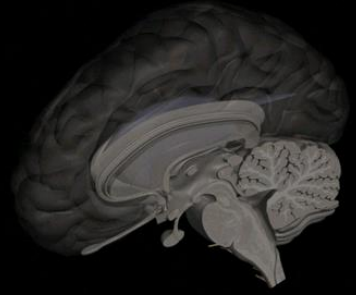
ESCUELA DE MEDICINA UNIVERSIDAD SAN SEBASTIÁN PUERTO MONTT



CEFALEA: OBJETIVOS A LOGRAR POR LOS ALUMNOS

-SER CAPAZ DE IDENTIFICAR LOS ELEMENTOS CLÍNICOS DE RIESGO DE LESIÓN INTRACRANEAL EN UN PACIENTE QUE CONSULTA POR EPISODIO DE CEFALEA AGUDA

-SER CAPAZ DE IDENTIFICAR ELEMENTOS CLÍNICOS DE RIESGO DE LESIÓN INTRA-CRANEAL EN PACIENTE CON HISTORIA DE CEFALEA RECURRENTE

-IDENTIFICAR ELEMENTOS CLAVES DEL EXAMEN FÍSICO GENERAL Y NEUROLÓGICO EN PACIENTE CON CEFALEA

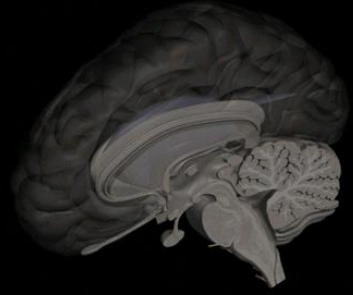
-SER CAPAZ DE MANEJAR ADECUADAMENTE UN EPISODIO DE CEFALEA AGUDA EN URGENCIA O ATENCIÓN PRIMARIA

-SER CAPAZ DE PLANTEAR UN ESTUDIO DE LABORATORIO O IMÁGENES CRITERIOSO EN UN PACIENTE QUE CONSULTA POR CEFALEA AGUDA O RECURRENTE

-MANEJAR DIAGNÓSTICOS DIFERENCIALES EN PACIENTES EN EDAD PEDIÁTRICA QUE CONSULTEN POR CEFALEA AGUDA O RECURRENTE

-IDENTIFICAR MEDICAMENTOS DE USO HABITUAL EN CRISIS DE CEFALEA, SU USO Y/O CONTRAINDICACIONES EN PEDIATRÍA

CEFALEA



-10% POBLACIÓN ENTRE 5 Y 15 AÑOS

-ORIGEN DEL DOLOR:

INTRACRANEAL	ARTERIAS CEREBRALES Y DURALES DURAMADRE DE BASE DEL ENCÉFALO GRANDES VENAS Y SENOS VENOSOS
EXTRACRANEAL	ARTERIAS EXTRACRANEALES MÚSCULOS INSERTADOS EN CRÁNEO NERVIOS CRANEALES PERIOSTIO/SENOS RAÍCES CERVICALES
-SIN SENSIBILIDAD DOLOROSA	PARÉNQUIMA ENCEFÁLICO CUBIERTA EPENDIMARIA MENINGES EXCEPTO DURAMADRE BASAL

- **International classification of headache disorder classification(1)**

- **Episodic headache**
- **Lasting 4-72 hours**
- **Any two of:**
  - **Unilateral**
  - **Pulsating**
  - **Moderate or severe**
  - **Worse with movement**

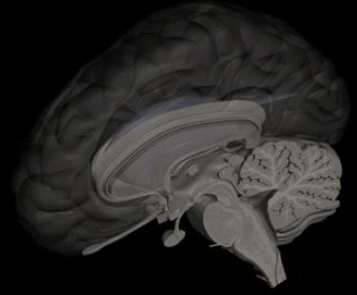
- **Any one of:**
  - **Nausea +/or vomiting**
  - **Photophobia and phonophobia**

BUT:

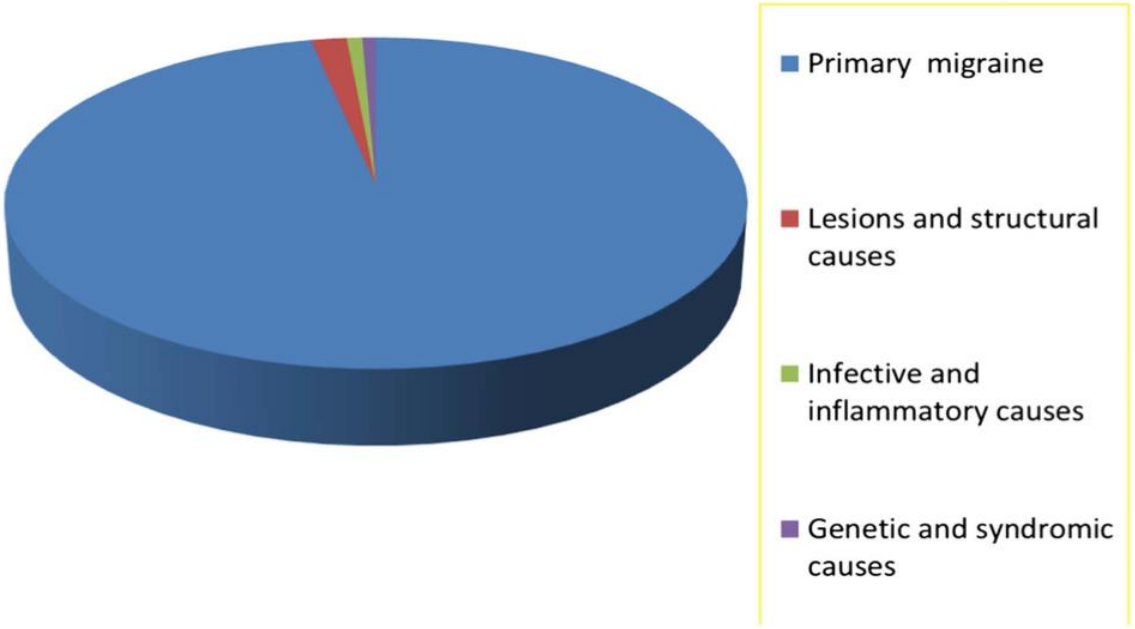
***May be bilateral or vary during a single headache**
***May be mild, may not pulsate**
***May be continuous**
***May be <4 hours, or >72 hours**
*** May have no accompaniments**

**MAY have aura without headache*

**MAY have inter-ictal hypersensitivity*



What is migraine?



Migraine mimics and secondary causes.

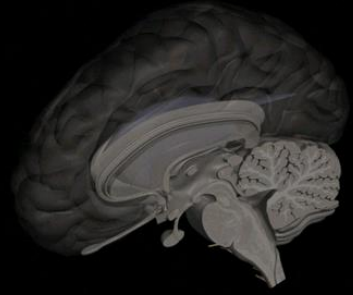
Table 2. Pediatric Migraine Criteria

Migraine without aura
- A. At least five attacks fulfilling criteria B–D
- B. Headache attacks lasting 1–72 hours (untreated or unsuccessfully treated)
- C. Headache has at least two of the following characteristics:
  1. Unilateral location, although may be bilateral or frontal (not exclusively occipital) in children
  2. Pulsing quality
  3. Moderate or severe pain intensity
  4. Aggravation by or causing avoidance of routine physical activity (eg, walking or climbing stairs)
- D. During headache at least one of the following:
  1. Nausea and/or vomiting
  2. Photophobia and phonophobia (which may be inferred from behavior)
- E. Not attributed to another disorder

Migraine with aura
- A. At least two attacks fulfilling criteria B–D
- B. Aura consisting of at least one of the following:
  1. Fully reversible visual symptoms including positive features (eg, flickering lights, spots, or lines) and/or negative features (ie, loss of vision)
  2. Fully reversible sensory symptoms including positive features (ie, pins and needles) and/or negative features (ie, numbness)
  3. Fully reversible dysphasic speech disturbance
- C. At least two of the following:
  1. Homonymous visual symptoms and/or unilateral sensory symptoms
  2. At least one aura symptom develops gradually over ≥5 min and/or different aura symptoms occur in succession over ≥5 min
  3. Each symptom lasts ≥5 and <60 min
- D. Headache fulfilling criteria B–D for migraine that begins during aura or follows aura within 60 minutes
- E. Not attributed to another disorder

Adapted with permission from Headache Classification Subcommittee of the International Headache Society. The International Classification of Headache Disorders: 2nd edition. *Cephalalgia*. 2004;24(suppl 1):9–160.

CAUSAS DE CEFALEA



-MIGRAÑA (JAQUECA)

-CONTAMINANTES AMBIENTALES
COMBUSTIÓN CALEFACCIÓN
PERFUMES
SOLVENTES

-COMORBILIDAD INFECCIOSA
IRA
FIEBRE
INFECCIONES SISTÉMICAS (MENINGITIS)

-CUADROS SISTÉMICOS
HTA
TIROIDES
DROGAS
FÁRMACOS
RINITIS CR.

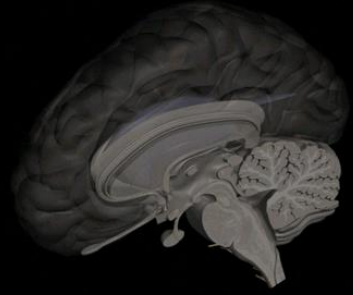
-MALA CALIDAD DE SUEÑO
DORMIR POCO-TARDE-EXCESO
APNEAS OBSTRUCTIVAS-BRUXISMO

-SENSIBILIDAD A ALIMENTOS

-ALTERACIONES ATM

-LESIONES INTRACRANEALES

MANEJO CEFALEA AGUDA EN LA INFANCIA



-ANAMNESIS
-TEMPERATURA
-EXAMEN FÍSICO GENERAL COMPLETO
-EXAMEN PIEL (PETEQUIAS) Y MUCOSAS
-SIGNOS MENINGEOS
-EXAMEN NEUROLÓGICO (BUSCAR" FOCALIDAD")
-FONDO DE OJO

-ANALGESIA
- AINE-TRIPTANES?
- HIDRATACIÓN
- MANEJO VÓMITOS (Ondasentrón: Izofran. Evitar uso de neurolépticos)
- EVITAR FACTORES AGRAVANTES (LUZ)
- O2?
- CORTICOIDES??
- DORMIR

-EXÁMENES
- GENERALES (PARÁMETROS INFECCIOSOS-ELP-GLICEMIA)
- NEUROIMÁGENES?

-OBSERVACIÓN INTRAHOSPITALARIA?

Table 1. Positive randomized trials of acute therapies in pediatric migraineurs

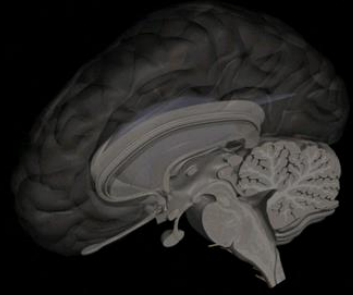
Agent	Trial Design	Clinical Setting	Ages Studied (Years)	Dose	Pain Relief	Contraindications
Nonspecific analgesics						
Acetaminophen [49]	Double-blind, placebo-controlled, crossover	Home	4-15	15 mg/kg PO	54% at 2 hours	Liver failure
NSAIDs						
Ibuprofen [48,49]	Double-blind, placebo-controlled, crossover [49]	Home	4-15	10 mg/kg PO	68% at 2 hours	Active GI bleeding
	Double-blind parallel group [48]	Home	6-12	7.5 mg/kg	76% at 2 hours	
Ketorolac [37]	Double-blind; no placebo	Emergency department	7-18	0.5 mg/kg IV; maximum, 30 mg	55.2% at 1 hour	Significant renal impairment
Dopamine receptor antagonists						
Prochlorperazine [37]	Double-blind; no placebo	Emergency department	7-18	0.15 mg/kg IV; maximum, 10 mg	84.8% at 1 hour	Long QT syndrome Movement disorder
Triptans						
Almotriptan*	Double-blind, placebo-controlled, parallel-group	Home	12-17	6.25 or 12.5 mg PO	71.8-72.9% at 2 hours	History of stroke or cardiovascular disease Uncontrolled hypertension Hemiplegic migraine
Rizatriptan [61]*	Double-blind, placebo-controlled	Home	6-17	20-39 kg: 5 mg PO ≥40 kg: 10 mg	73-74% at 2 hours	
Zolmitriptan [62,71]	Double-blind, placebo-controlled, crossover [62]	Home	6-18	2.5 mg PO	62% at 2 hours, 64% in those <13 years old	
	Double-blind, placebo-controlled, crossover [71]	Home	12-17	5 mg NS	58.1% at 1 hour	
Sumatriptan [65-67]†	Double-blind, placebo-controlled [65]	Home	6-9	20 mg NS	86% at 2 hours	Pregnancy (?)
	Double-blind, placebo-controlled [67]	Home	12-17	5-20 mg NS	66% at 2 hours	
	Double-blind, placebo-controlled, crossover [66]	Home	8-17	20-39 kg: 10 mg NS ≥40 kg: 20 mg	64% at 2 hours	

Abbreviations:
GI = Gastrointestinal
IV = Intravenous
NS = Nasal spray
NSAIDs = Nonsteroidal anti-inflammatory drugs
PO = Oral

* Almotriptan is approved by the Food and Drug Administration for acute migraine treatment in patients aged 12-17 years and rizatriptan is approved for the 6-17-year-old age group.

† The 2004 practice parameter of the American Academy of Neurology recommends the consideration of nasal-spray sumatriptan for acute migraine in pediatric patients, and it is approved in Europe for adolescents.

MANEJO CEFALEA CRÓNICA (15 o más episodios/mes) EN LA INFANCIA



-ANAMNESIS
-CALENDARIZACIÓN EVENTOS Y BÚSQUEDA PRECIPITANTES
-EXAMEN FÍSICO GENERAL COMPLETO
-EXAMEN PIEL
-EXAMEN NEUROLÓGICO
-FONDO DE OJO

-CORREGIR FACTORES AMBIENTALES O ETIOLÓGICOS MANEJABLES

-ANALGESIA MANEJO AGUDO DE CRISIS (EVITAR ERGOTAMÍNICOS)
MANEJO PROFILÁCTICO (PREVENTIVO): Dieta-Bloqueadores Canales Na^+
Bbloqueadores-Anticonvulsivantes
Tricíclicos

-EXÁMENES GENERALES (GLICEMIA, TIROIDES, FERRITINA)
NEUROIMÁGENES?

-EEG???

-SIGNOS DE ALARMA (“RED FLAGS”)

TABLA 1. TIPIFICACIÓN DE RIESGO Y PROBABILIDAD DE TUMOR DEL SNC (15)

RIESGO	CARACTERÍSTICAS CLÍNICAS	PROBABILIDAD DE TENER UN TUMOR DEL SNC
Riesgo bajo	Cefalea no migrañosa, de más de 6 meses de evolución como síntoma único y examen neurológico normal	0.5 a 2 /10.000
Riesgo intermedio	Migraña y examen neurológico normal	1-6 /1000
Riesgo alto	Cefalea + predictores de lesión ocupante de espacio: Cefalea de menos de 6 meses de evolución, relacionada al sueño, vómitos, confusión, ausencia de aura visual, ausencia de historia familiar de migraña, examen neurológico anormal	1 a 8 /100

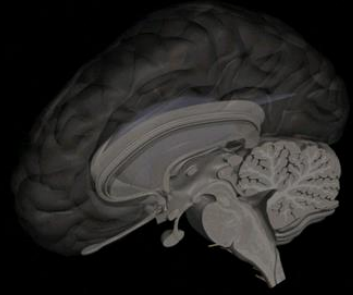
TABLA 2. SIGNOS Y SÍNTOMAS QUE ORIENTAN A LESIONES INTRACRANEANAS EN CEFALEA (16)

1. Cefalea que ocurre en ausencia de cefalea previa
2. Severidad ("el peor dolor de cabeza de la vida")
3. Cambio en un patrón de cefalea crónica
4. Dolor consistentemente localizado
5. Dolor que debilita al paciente
6. Dolor que ocurre temprano en la mañana
7. Dolor asociado a síntomas o signos neurológicos

TABLA 3. CARACTERÍSTICAS DE LA CEFALEA ASOCIADA HIPERTENSIÓN INTRACRANEANA (16)

1. Generalizada
2. Agravada por la tos o maniobra de Valsalva
3. Empeora en la mañana o al despertar
4. Severidad aumenta progresivamente
5. Se asocia a náuseas, vómitos o signos neurológicos
6. Pérdida de visión transitoria con cambios de postura
7. Compromiso de conciencia

HIPERTENSIÓN ENDOCRANEAL



SÍNTOMAS Y SIGNOS DE SOSPECHA CLÍNICA

-CEFALEA
-VÓMITOS EXPLOSIVOS
-CAMBIO DE PERSONALIDAD
-ATERACIÓN NIVEL CONCIENCIA (IRRITABILIDAD)
-ALTERACIONES OCULOMOTORAS: DIPLOPIA (VI PAR)
-EDEMA PAPILAR
-LACTANTES: MACROCEFALIA Y FONTANELA TENSA
SIGNO DEL SOL NACIENTE (PARÁLISIS DE MIRADA ASCENDENTE)

CONTRAINDICACIÓN PARA PUNCIÓN LUMBAR

MANEJO SEGÚN ETIOLOGÍA (HIDROCEFALIA, TUMORES, HEMORRAGIAS, EDEMA)

HIPERTENSIÓN ENDOCRANEAL IDIOPÁTICA (CEFALEA REFRACTARIA, OCASIONAL VI PAR, EDEMA DE PAPILA, NEUROIMÁGENES NORMALES DIAGNÓSTICO: MEDIR PRESIÓN LCR)

TABLA 4. INDICACIONES DE NEUROIMÁGENES (18)

1. Cefalea de presentación aguda o hiperaguda
2. Cefalea cuya severidad aumenta progresivamente
3. Cambio en el patrón temporal de la cefalea
4. Deterioro en el rendimiento escolar
5. Cambios de personalidad
6. Aumento de la Circunferencia Craneana (CC)
7. Examen neurológico anormal
8. Niño menor de 5 años

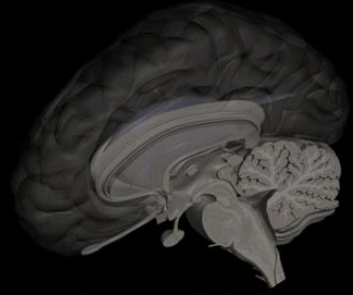
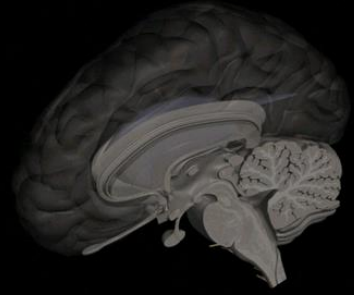


TABLA 5. INDICACIONES "PRIORITARIAS" DE NEUROIMÁGENES SEGÚN LEWIS (21)

De primera prioridad (urgente):	De prioridad mediana:
1. Cefalea aguda o la peor cefalea de la vida 2. Cefalea "en trueno" 3. Crónica progresiva (empeora en el tiempo) 4. Síntomas neurológicos focales 5. Examen neurológico anormal: Edema de papila; alteración de movimientos oculares; hemiparesia; ataxia; reflejos anormales 6. Presencia de signos de Síndrome Neurocutáneo (Esclerosis Tuberosa o Neurofibromatosis) 7. Presencia de válvula derivativa ventriculoperitoneal	1. Cefalea o vómitos al despertar 2. Ubicación fija del dolor 3. Signos meníngeos

JAMA Network Open



Original Investigation | Oncology

Association of Exposure to Diagnostic Low-Dose Ionizing Radiation With Risk of Cancer Among Youths in South Korea

Jae-Young Hong, MD, PhD; Kyungdo Han, PhD; Jin-Hyung Jung, PhD; Jung Sun Kim, MD, PhD

Abstract

IMPORTANCE Diagnostic low-dose ionizing radiation has great medical benefits; however, its increasing use has raised concerns about possible cancer risks.

OBJECTIVE To examine the risk of cancer after diagnostic low-dose radiation exposure.

DESIGN, SETTING, AND PARTICIPANTS This population-based cohort study included youths aged 0 to 19 years at baseline from South Korean National Health Insurance System claim records from January 1, 2006, to December 31, 2015. Exposure to diagnostic low-dose ionizing radiation was classified as any that occurred on or after the entry date, when the participant was aged 0 to 19 years, on or before the exit date, and at least 2 years before any cancer diagnosis. Cancer diagnoses were based on *International Statistical Classification of Diseases and Related Health Problems, Tenth Revision* codes. Data were analyzed from March 2018 to September 2018.

MAIN OUTCOMES AND MEASURES The primary analysis assessed the incidence rate ratios (IRRs) for exposed vs nonexposed individuals using the number of person-years as an offset.

RESULTS The cohort included a total of 12 068 821 individuals (6 339 782 [52.5%] boys). There were 2 309 841 individuals (19.1%) aged 0 to 4 years, 2 951 679 individuals (24.5%) aged 5 to 9 years, 3 489 709 individuals (28.9%) aged 10 to 14 years, and 3 317 593 individuals (27.5%) aged 15 to 19 years. Of these, 1 275 829 individuals (10.6%) were exposed to diagnostic low-dose ionizing radiation between 2006 and 2015, and 10 792 992 individuals (89.4%) were not exposed. By December 31, 2015, 21 912 cancers were recorded. Among individuals who had been exposed, 1444 individuals (0.1%) received a cancer diagnosis. The overall cancer incidence was greater among exposed individuals than among nonexposed individuals after adjusting for age and sex (IRR, 1.64 [95% CI, 1.56-1.73]; $P < .001$). Among individuals who had undergone computed tomography scans in particular, the overall cancer incidence was greater among exposed individuals than among nonexposed individuals after adjusting for age and sex (IRR, 1.54 [95% CI, 1.45-1.63]; $P < .001$). The incidence of cancer increased significantly for many types of lymphoid, hematopoietic, and solid cancers after exposure to diagnostic low-dose ionizing radiation. Among lymphoid and hematopoietic cancers, incidence of cancer increased the most for other myeloid leukemias (IRR, 2.14 [95% CI, 1.86-2.46]) and myelodysplasia (IRR, 2.48 [95% CI, 1.77-3.47]). Among solid cancers, incidence of cancer increased the most for breast (IRR, 2.32 [95% CI, 1.35-3.99]) and thyroid (IRR, 2.19 [95% CI, 1.97-2.20]) cancers.

CONCLUSIONS AND RELEVANCE This study found an association of increased incidence of cancer with exposure to diagnostic low-dose ionizing radiation in a large cohort. Given this risk, diagnostic low-dose ionizing radiation should be limited to situations in which there is a definite clinical indication.

Key Points

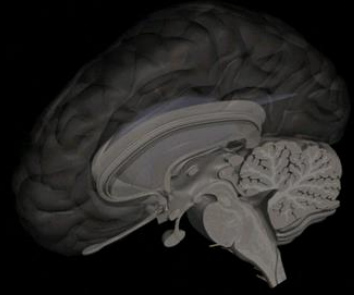
Question Is exposure to diagnostic low-dose ionizing radiation in youths associated with increased risk of cancer?

Findings In this population-based cohort study including more than 12 million South Korean youths, the overall cancer incidence was greater among individuals exposed to diagnostic low-dose ionizing radiation than among nonexposed individuals after adjusting for age and sex (incidence rate ratio, 1.64). The incidence of cancer increased significantly for many types of cancers after radiation exposure, particularly mouth and pharynx, breast, thyroid, lymphoid and hematopoietic, and myelodysplasia cancers.

Meaning The association of increased cancer risk with exposure to diagnostic low-dose ionizing radiation may be important to inform decisions about diagnostic use of low-dose ionizing radiation in Asian youth populations worldwide.

+ Supplemental content

Author affiliations and article information are listed at the end of this article.



Original research article

EUROPEAN STROKE JOURNAL

European Stroke Journal
2020, Vol. 5(1) 73–77

DOI: 10.1177/2396987319868048
journals.sagepub.com/home/eso

SAGE

Higher risk of intracranial aneurysms and subarachnoid haemorrhage in siblings of families with intracranial aneurysms

CCM Zuurbier[1], JP Greving[2], GJE Rinkel[1] and YM Ruigrok[1]

Abstract

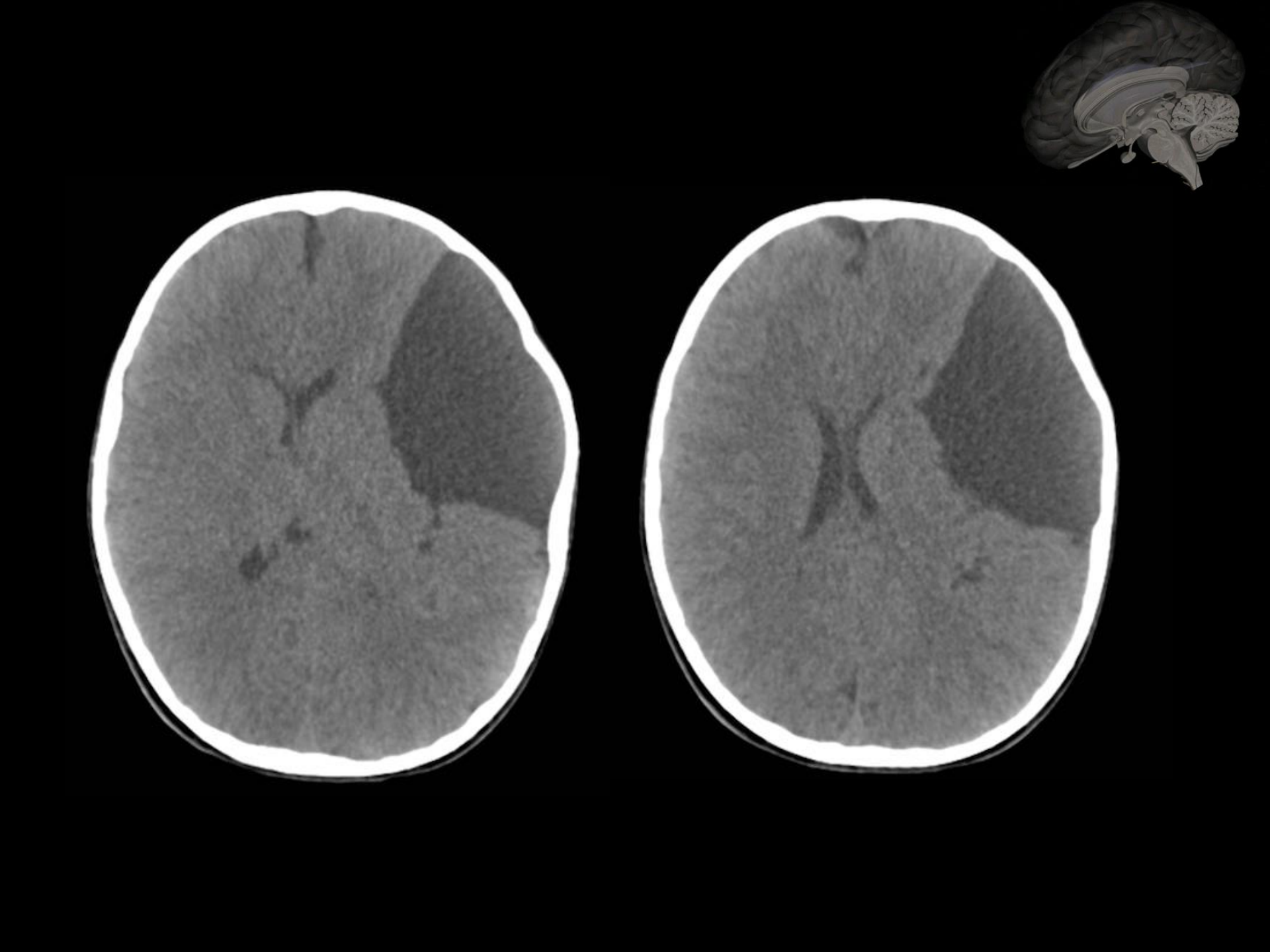
Introduction: First-degree relatives of patients with familial aneurysmal subarachnoid hemorrhage have an increased risk of unruptured intracranial aneurysms and aneurysmal subarachnoid hemorrhage. We assessed whether the type of kinship of first-degree relatives of aneurysmal subarachnoid hemorrhage patients influences this risk.

Patients and methods: We used all available data from the prospectively collected database of families consulting our outpatient clinic between 1994-2016. We constructed pedigrees for all families with ≥2 first-degree relatives with aneurysmal subarachnoid hemorrhage or unruptured intracranial aneurysms. The proband was defined as the first family member with aneurysmal subarachnoid hemorrhage who sought medical attention. We compared both the proportion of aneurysmal subarachnoid hemorrhage and unruptured intracranial aneurysms in proband's first-degree relatives by calculating relative risks (RR) with children as the reference.

Results: We studied 154 families with 1,105 first-degree relatives of whom 146 had aneurysmalsubarachnoid hemorrhage. Unruptured intracranial aneurysms were identified in 63 (19%) of the 326 screened relatives. Siblings had a higher risk of aneurysmal subarachnoid hemorrhage (RR:1.62, 95% CI:1.12–2.38) and parents a lower risk (RR:0.44, 95% CI:0.24–0.81) than children. Siblings also had a higher risk of unruptured intracranial aneurysms (RR:2.28, 95% CI:1.23–4.07, age-adjusted RR:2.04, 95% CI:1.07–3.92) than children.

Conclusion: Siblings of patients with aneurysmal subarachnoid hemorrhage have a significanthigher risk of both unruptured intracranial aneurysms and aneurysmal subarachnoid hemorrhage and parents have a lower risk of aneurysmal subarachnoid hemorrhage than children.

Discussion: Type of kinship is a relevant factor to consider in risk prediction and screening advice in families with familial aneurysmal subarachnoid hemorrhage.



Association Between Childhood Migraine and History of Infantile Colic

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Importance Infantile colic is a common cause of inconsolable crying during the first months of life and has been thought to be a pain syndrome. Migraine is a common cause of headache pain in childhood. Whether there is an association between these 2 types of pain in unknown.

Objective To investigate a possible association between infantile colic and migraines in childhood.

Design, Setting, and Participants A case-control study of 208 consecutive children aged 6 to 18 years presenting to the emergency department and diagnosed as having migraines in 3 European tertiary care hospitals between April 2012 and June 2012. The control group was composed of 471 children in the same age range who visited the emergency department of each participating center for minor trauma during the same period. A structured questionnaire identified personal history of infantile colic for case and control participants, confirmed by health booklets. A second study of 120 children diagnosed with tension-type headaches was done to test the specificity of the association.

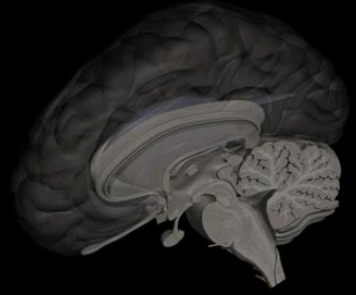
Main Outcomes and Measures Difference in the prevalence of infantile colic between children with and without a diagnosis of migraine.

Results Children with migraine were more likely to have experienced infantile colic than those without migraine (72.6% vs 26.5%; odds ratio [OR], 6.61 [95% CI, 4.38-10.00]; $P<.001$), either migraine without aura (n=142; 73.9% vs 26.5%; OR, 7.01 [95% CI, 4.43-11.09]; $P<.001$), or migraine with aura (n=66; 69.7% vs 26.5%; OR, 5.73 [95% CI, 3.07-10.73]; $P<.001$). This association was not found for children with tension-type headache (35% vs 26.5%; OR, 1.46 [95% CI, 0.92-2.32]; $P=.10$).

Conclusion and Relevance The presence of migraine in children and adolescents aged 6 to 18 years was associated with a history of infantile colic. Additional longitudinal studies are required.

JAMA. 2013;309(15):1607-1612 www.jama.com

INFANTILE COLIC IS A COMMON CAUSE of inconsolable crying during the first months of life. According to criteria by Wessel, it is usually diagnosed by crying and fussing for more than 3 hours per day, more than 3 days per week, and for more than 3 weeks



CEFALEA: OBJETIVOS A LOGRAR POR LOS ALUMNOS

-SER CAPAZ DE IDENTIFICAR LOS ELEMENTOS CLÍNICOS DE RIESGO DE LESIÓN INTRACRANEAL EN UN PACIENTE QUE CONSULTA POR EPISODIO DE CEFALEA AGUDA

-SER CAPAZ DE IDENTIFICAR ELEMENTOS CLÍNICOS DE RIESGO DE LESIÓN INTRA-CRANEAL EN PACIENTE CONHISTORIA DE CEFALEA RECURRENTE

-IDENTIFICAR ELEMENTOS CLAVES DEL EXAMEN FÍSICO GENERAL Y NEUROLÓGICO EN PACIENTE CON CEFALEA

-SER CAPAZ DE MANEJAR ADECUADAMENTE UN EPISODIO DE CEFALEA AGUDA EN URGENCIA O ATENCIÓN PRIMARIA

-SER CAPAZ DE PLANTEAR UN ESTUDIO DE LABORATORIO O IMÁGENES CRITERIOSO EN UN PACIENTE QUE CONSULTA POR CEFALEA AGUDA O RECURRENTE

-MANEJAR DIAGNÓSTICOS DIFERENCIALES EN PACIENTES EN EDAD PEDIÁTRICA QUE CONSULTEN POR CEFALEA AGUDA O RECURRENTE

-IDENTIFICAR MEDICAMENTOS DE USO HABITUAL EN CRISIS DE CEFALEA, SU USO Y/O CONTRAINDICACIONES EN PEDIATRÍA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AND INTRODUCING MICHAEL O'FARRELL CASTING BY MEGHAN LENNOX MUSIC BY RONEN LANDA
FILM EDITOR CHARLES CUSUMANO CINEMATOGRAPHER TIMOTHY NUTTALL
PRODUCED BY MICHAEL O'FARRELL JULIANNA GELINAS JOSEPH BARBERA MATTHEW BONIFACIO
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