

Be Alert to Signs of Physical Abuse in Children

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MIAMI BEACH — An unbelievable or inconsistent explanation for bruises, fractures, head trauma, or burns in a child is among the red flags that raise suspicion of physical abuse, said Dr. Joseph A. Zenel.

Bruises left by abuse can appear on the soft tissue of the face, chest, abdomen, buttocks, ears, neck, genital areas, and inner thighs. Infants not old enough to walk

with multiple, uniform soft tissue bruises in particular might be victims of abuse (Arch. Dis. Child. 2005;90:182-9).

Another tip is to look for multiple bruises that appear on more than one plane, said Dr. Zenel, who is on the pediatrics faculty at Oregon Health and Science University, Portland. The majority of accidental bruises appear over bony prominences, he added.

A trauma history that changes over time or is inconsistent, as well as evidence of

multiple injuries at various healing stages, are other red flags for abuse, Dr. Zenel said. Estimation of the timing of a bruise based on appearance, especially within the first 24 hours of injury, can be highly inaccurate (Pediatrics 2003;112:804-7).

Clinical suspicion, physical examination, and a variety of imaging modalities contribute to the diagnosis of child abuse. A CT or MRI of the head may be indicated because about 50% of abuse is associated with head trauma, Dr. Zenel said. A de-

pressed skull fracture, a diastatic fracture greater than 3 mm wide, a nonparietal fracture, and any fracture associated with intracranial hemorrhage raise the suspicion of abuse.

In a study of 152 children less than 2 years of age with traumatic brain injuries, 80 (53%) were confirmed abuse cases (Pediatrics 2004;114:633-9). Those with inflicted injury were more likely to present with no external signs of trauma, subdural hematoma, cerebral edema, seizures, and rib, long bone, or metaphyseal fractures than those with accidental injuries.

"Suspect inflicted head trauma in any acute neurologic deterioration in an otherwise healthy infant or child," Dr. Zenel said at the annual Masters of Pediatrics conference sponsored by the University of Miami.

In a study of 81 adults who admitted abuse, 56% were the fathers, 16% were the mothers' boyfriends, 15% were the mothers, 5% were female babysitters, and the remainder were "other" perpetrators (Arch. Pediatr. Adolesc. Med. 2004;158:454-8). The perpetrator may be a person you do not suspect, he said.

A skeletal survey and retinal examination should be considered part of the physical examination depending on the pattern or number of injuries. In addition, a bone scan is warranted in some cases, Dr. Zenel said. Skeletal trauma is the second most common sign of physical child abuse, he said, particularly in infants younger than 18 months of age.

Researchers found that isolated femoral fractures were rarely associated with abuse, accounting for 9% of fractures among 139 children under age 4 years (J. Pediatr. Orthop. 2000;20:475-81). Patient age was the most significant predictor associated with abuse in this report: 10 (42%) of 24 non-walking-age children were abused versus 3 (3%) of 115 walking-age children.

Evaluation of the child by social services should include assessment of other children in the household, Dr. Zenel said. Physicians have an obligation to report suspected child abuse.

Recommended laboratory tests in a suspected abuse case include complete blood count, prothrombin time/partial prothrombin time assay, liver function test, and amylase assay, Dr. Zenel said.

Inflicted burns associated with child abuse are typically a result of discipline or punishment, he said. Clinical presentation is typically deeper burns in a more symmetrical pattern versus accidental burns. A stocking or glove distribution is another sign of a potentially inflicted burn.

While not physical abuse, neglect is the leading form of maltreatment of children, Dr. Zenel said. Neglect accounts for more than half of reports made to child welfare authorities. Delays in health care, failure to thrive, hunger, apathy, inadequate hygiene, homelessness, inadequate clothing, and unmet educational needs are among the leading signs of neglect.

The American Academy of Pediatrics provides additional information on child abuse and neglect for providers and parents. Visit www.aap.org/healthtopics/childabuse.cfm.

METROGEL®

(metronidazole gel), 1%

BRIEF SUMMARY

For topical use only. Not for oral, ophthalmic or intravaginal use.

INDICATIONS AND USAGE

METROGEL® (metronidazole gel), 1% is indicated for the topical treatment of inflammatory lesions of rosacea.

CONTRAINDICATIONS

METROGEL® (metronidazole gel), 1% is contraindicated in those patients with a history of hypersensitivity to metronidazole or to any other ingredient in this formulation.

PRECAUTIONS

General: Topical metronidazole has been reported to cause tearing of the eyes. Therefore, contact with the eyes should be avoided. If a reaction suggesting local skin irritation occurs, patients should be directed to use the medication less often or discontinue use. Metronidazole is a nitroimidazole and should be used with care in patients with evidence of, or history of, blood dyscrasia.

Information for Patients: Patients using METROGEL® (metronidazole gel), 1% should receive the following information and instructions:

1. This medication is to be used as directed.
2. It is for external use only.
3. Avoid contact with the eyes.
4. Cleanse affected area(s) before applying METROGEL® (metronidazole gel), 1%.
5. This medication should not be used for any other condition than that for which it is prescribed.
6. Patients should report any adverse reaction to their physicians.

Drug Interaction: Oral metronidazole has been reported to potentiate the anticoagulant effect of coumarin and warfarin, resulting in a prolongation of prothrombin time. Drug interactions should be kept in mind when METROGEL® (metronidazole gel), 1% is prescribed for patients who are receiving anticoagulant treatment, although they are less likely to occur with topical metronidazole administration because of low absorption.

Carcinogenesis, Mutagenesis and Impairment of Fertility: Metronidazole has shown evidence of carcinogenic activity in a number of studies involving chronic, oral administration in mice and rats, but not in studies involving hamsters.

In several long-term studies in mice, oral doses of approximately 225 mg/m²/day or greater (approximately 37 times the human topical dose on a mg/m² basis) were associated with an increase in pulmonary tumors and lymphomas. Several long-term oral studies in the rat have shown statistically significant increases in mammary and hepatic tumors at doses >885 mg/m²/day (144 times the human dose).

Metronidazole has shown evidence of mutagenic activity in several *in vitro* bacterial assay systems. In addition, a dose-related increase in the frequency of micronuclei was observed in mice after intraperitoneal injections. An increase in chromosomal aberrations in peripheral blood lymphocytes was reported in patients with Crohn's disease who were treated with 200 to 1200 mg/day of metronidazole for 1 to 24 months. However, in another study, no increase in chromosomal aberrations in circulating lymphocytes was observed in patients with Crohn's disease treated with the drug for 8 months.

In one published study, using albino hairless mice, intraperitoneal administration of metronidazole at a dose of 45 mg/m²/day (approximately 7 times the human topical dose on a mg/m² basis) was associated with an increase in ultraviolet radiation-induced skin carcinogenesis. Neither dermal carcinogenicity nor photocarcinogenicity studies have been performed with METROGEL® (metronidazole gel), 1% or any marketed metronidazole formulations.

Pregnancy: Teratogenic Effects: Pregnancy Category B. There are no adequate and well-controlled studies with the use of METROGEL® (metronidazole gel), 1% in pregnant women.

Metronidazole crosses the placental barrier and enters the fetal circulation rapidly. No fetotoxicity was observed after oral administration of metronidazole in rats or mice at 200 and 20 times, respectively, the expected clinical dose. However, oral metronidazole has shown carcinogenic activity in rodents. Because animal reproduction studies are not always predictive of human response, METROGEL® (metronidazole gel), 1% should be used during pregnancy only if clearly needed.

Nursing Mothers: After oral administration, metronidazole is secreted in breast milk in concentrations similar to those found in the plasma. Even though blood levels taken after topical metronidazole application are significantly lower than those achieved after oral metronidazole, a decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother and the risk to the infant.

Pediatric Use: Safety and effectiveness in pediatric patients have not been established.

Geriatric Use: While specific clinical trials in the geriatric population have not been conducted, sixty-six patients aged 65 years and older treated with METROGEL® (metronidazole gel), 1% over ten weeks showed comparable safety and efficacy as compared to the general study population.

ADVERSE REACTIONS

In a controlled clinical trial, 557 patients used METROGEL® (metronidazole gel), 1% and 189 patients used the gel vehicle once daily. The following table summarizes adverse reactions that occur at a rate of ≥ 1% in the clinical trials:

System Organ Class/Preferred Term	Metronidazole Gel, 1% N= 557	Gel Vehicle N=189
Patients with at least one AE	186 (33.4)	51 (27.0)
Infections and infestations	76 (13.6)	28 (14.8)
Bronchitis	6 (1.1)	3 (1.6)
Influenza	8 (1.4)	1 (0.5)
Nasopharyngitis	17 (3.1)	8 (4.2)
Sinusitis	8 (1.4)	3 (1.6)
Upper respiratory tract infection	14 (2.5)	4 (2.1)
Urinary tract infection	6 (1.1)	1 (0.5)
Vaginal mycosis	1 (0.2)	2 (1.1)
Musculoskeletal and connective tissue disorders	19 (3.4)	5 (2.6)
Back pain	3 (0.5)	2 (1.1)
Neoplasms	4 (0.7)	2 (1.1)
Basal cell carcinoma	1 (0.2)	2 (1.1)
Nervous system disorders	18 (3.2)	3 (1.6)
Headache	12 (2.2)	1 (0.5)
Respiratory, thoracic and mediastinal disorders	22 (3.9)	5 (2.6)
Nasal congestion	6 (1.1)	3 (1.6)
Skin and subcutaneous tissue disorders	36 (6.5)	12 (6.3)
Contact dermatitis	7 (1.3)	1 (0.5)
Dry skin	6 (1.1)	3 (1.6)
Vascular disorders	8 (1.4)	1 (0.5)
Hypertension	6 (1.1)	1 (0.5)

The following table summarizes the highest scores of local cutaneous signs and symptoms of irritation that were worse than baseline:

Sign/Symptom	Metronidazole Gel, 1% N= 544	Gel Vehicle N=184
Dryness	138 (25.4)	63 (34.2)
Mild	93 (17.1)	41 (22.3)
Moderate	42 (7.7)	20 (10.9)
Severe	3 (0.6)	2 (1.1)
Scaling	134 (24.6)	60 (32.6)
Mild	88 (16.2)	32 (17.4)
Moderate	43 (7.9)	27 (14.7)
Severe	3 (0.6)	1 (0.5)
Pruritus	86 (15.8)	35 (19.0)
Mild	53 (9.7)	21 (11.4)
Moderate	27 (5.0)	13 (7.1)
Severe	6 (1.1)	1 (0.5)
Stinging/burning	56 (10.3)	28 (15.2)
Mild	39 (7.2)	18 (9.8)
Moderate	7 (1.3)	9 (4.9)
Severe	10 (1.8)	1 (0.5)

The following additional adverse experiences have been reported with the topical use of metronidazole: skin irritation, transient redness, metallic taste, tingling or numbness of extremities, and nausea.

OVERDOSAGE: There are no reported human experiences with overdosage of METROGEL® (metronidazole gel), 1%. Topically applied metronidazole can be absorbed in sufficient amount to produce systemic effects.

DOSEAGE AND ADMINISTRATION: Areas to be treated should be cleansed before application of METROGEL® (metronidazole gel), 1%. Apply and rub in a thin film of METROGEL® (metronidazole gel), 1% once daily to entire affected area(s). Patients may use cosmetics after application of METROGEL® (metronidazole gel), 1%.

HOW SUPPLIED: METROGEL® (metronidazole gel), 1% is supplied as follows:

60 gram tube – NDC 0299-3820-60

60 gram tube with complimentary 4 oz Cetaphil® Gentle Skin Cleanser – NDC 0299-3820-04

Keep out of the reach of children.

Storage Conditions: Store at controlled room temperature: 20° to 25°C (68° to 77°F), excursions permitted between 59° and 86°F (15°-30°C).

Prescribing Information as of February 2007.

Rx Only

US Patent No. 6,881,726

Manufactured by:

Galderma Production Canada Inc.

Baie d'Urfé, QC, H9X 3S4 Canada

Made in Canada.

Marketed by:

Galderma Laboratories, L.P.

Fort Worth, Texas 76177 USA

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References: 1. Wolters Kluwer, PHasT Database, January 2008. 2. Data on file. A multi-center clinical study of metronidazole 1% compared to vehicle for 10 weeks (n=552). 3. Data on file. HSA-3. Galderma Laboratories, L.P. 4. Odom RB. The subtypes of rosacea: implications for treatment. *Cutis*. 2004;73:9-14.

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