Pediatric Acne

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Disclosures

Almiral – A(H)
Dermira – A(H)
Sonoma pharmaceuticals A(H)
Choose appropriate therapies for treatment of acne in children from newborns to preteens

Learning Objective
National Pediatric Acne Guidelines Initiative

What is this?
Recommendations for Pediatric Acne

• Expert recommendations by the American Acne and Rosacea Society

• Reviewed and Endorsed by the American Academy of Pediatrics

• First detailed, evidence-based clinical guidelines for pediatric acne
Pediatric Acne Guidelines

• Published in May 2013

• Evidence-based recommendations for the diagnosis and treatment of pediatric acne.


Acne in Children

• Birth to 12 years of age
  • Neonatal
  • Infantile
  • Mid-Childhood
  • Preadolescent
Neonatal Acne

• 0-6 weeks of life
• Small erythematous papules
• ? Acne --- maybe neonatal cephalic pustulosis
• Neonatal acne represents a heterogeneous set of conditions
• Controversy Pityrosporum (Malassezia) – sometimes present and sometimes not
• Usually resolves over a few months
• Distribution: Forehead, Cheeks, Nose
  Less commonly: neck, chest, back
Neonatal Acne

Neonatal Acne

• Ketoconazole cream 2%

• If there are true comedones consider acne medications that you would use in infantile acne

• Usually not scarring, so can also not treat
Neonatal Acne - Consensus

- Neonates may have true acne
- Many self-limiting papulopustular eruptions that occur on neonate faces
- Systemic abnormalities noted (growth, precocity, virilization), then referral to pediatric endocrinology

Neonatal/Infantile Acne

- Transient neonatal pustular melanosis
- Erythema toxicum neonatorum
- Sebaceous gland hyperplasia
- Congenital adrenal hyperplasia
- Virilizing tumor
- Other endocrinopathy
- Maternal medications – Lithium, Phenytoin, corticosteroids

Infantile

- 0-1 year; usually see around 3-6 months
- Boys>girls
- **May predispose to worse acne in teenage years***
- Increased sebum production
- Look more like classic acne – will see comedones
- Face where **cheeks** are mainly affected, also chin
- Less on the chest and back
- Should treat – can cause scarring
- Look for signs of hormonal abnormalities

Infantile Acne

Pediatric Acne
Dermatologic Clinics.
Infantile acne - Consensus

• Most infantile acne is self-limited

• If there are signs of hormonal abnormalities, refer to pediatric endocrinologist

  • *Eichenfield, LF, et al. Pediatrics 2013;131;S163*
Infantile Acne treatments

• Combine treatments
• Watch products that are appropriate for a baby
  • Topical antibiotics/benzoyl peroxide
  • Adapalene cream/low strength tretinoin
  • Avoid washes so that wash doesn’t get into the eye
  • Oral erythromycin
  • Isotretinoin if severe, scarring
    • HOW YOUNG? I have seen case reports in the first months of life
    • DOSE ? 0.5mg/kg to 1mg/kg; cumulative dose 60-180mg/kg
Mid childhood acne

• Most likely time to have underlying hormonal abnormality

• Newer concept
• From 1-7(8) years of age
• Androgens should be low and stable
• Evaluate for Hyperandrogenism
• Distribution – face, chest, back
Mid-childhood/Prepubertal Acne

• Cushing’s syndrome
• Congenital adrenal hyperplasia
• Premature adrenarche
• Polycystic ovarian syndrome
• Gonadal tumors
• Adrenal tumors
• Ovarian tumors
• True precocious puberty

Mid Childhood Acne

• Guide for Evaluation of Mid-Childhood Acne

• Bone age
• Growth Chart
• Hormone Levels

• Acne Vulgaris Editors, Shalita, AR., Del Rosso, JQ, Webster, GF, 2011 Informa Healthcare. Pp188-190
Mid Childhood Acne

• Guide for Evaluation of Mid-Childhood Acne

• **Bone age**
  • Accelerated with Androgen Excess
  • Delayed in Cushing’s Syndrome

• Growth Chart

• Hormone Levels

• Acne Vulgaris Editors, Shalita, AR., Del Rosso, JQ, Webster, GF, 2011 Informa Healthcare. Pp188-190
Mid Childhood Acne

• Guide for Evaluation of Mid-Childhood Acne

• Bone age

• Growth Chart
  • Height crossing percentiles upward in androgen excess
  • Weight crossing percentiles upward and height downward in Cushing’s syndrome

• Hormone Levels

• Acne Vulgaris Editors, Shalita, AR., Del Rosso, JQ, Webster, GF, 2011 Informa Healthcare. Pp188-190
Mid Childhood Acne

- Guide for Evaluation of Mid-Childhood Acne
- Bone age
- Growth Chart
- **Hormone Levels**
  - High levels of androgens such as free testosterone and DHEAS in tumors and PCOS
  - High levels of 17-a hydroxyprogesterone in CAH
Which Hormones to check

- DHEA(s)
- Testosterone
- Cortisol
- 17 hydroxyprogesterone
- Androstenedione
- LH/FSH
- Prolactin
- Pediatric Endocrinologist Referral – to ensure completeness
Mid-childhood acne - consensus

• Acne in this age group is very uncommon

• Should warrant workup for cause of hyperandrogenism

• Eichenfield, LF, et al. Pediatrics 2013;131;S163
Preadolescent acne

- **8-12 years of age**
- Treatments same as infantile/mid-childhood
- Adherence
  - Once a day regimen
- Swallowing pills – use liquid forms
- Isotretinoin – uncommon but may need to repeat (early teen acne – young age they may need again)
Preadolescent Acne Differential Diagnosis

- Angiofibromas or adenoma sebaceum*
- Corticosteroid induced acne/inhalers
- Flat warts
- Keratosis pilaris
- Molluscum
- Syringomas
- Perioral dermatitis
- Pomade acne

Preadolescent Acne

- Sometimes called Preteen acne
  - Comedones
  - Seborrhea
  - Polycystic Ovarian Syndrome (PCOS) – can see at this age (8-12 years) in girls
  - Distribution:
    - Face (especially forehead)
    - Conchae of ears may be involved
    - Chest
    - Back

- Pelvic Ultrasound is not considered useful for diagnosis of PCOS because it is considered non-specific

Factors related to onset of PCOS in the Pediatric Population

- smaller for gestational age
- low-birth weight
- precocious pubarche

- Important to follow girls in these groups

- Can be difficult diagnosis – have to tease out the normal changes of puberty with those of the condition

What is premature pubarche

• Appearance of **pubic hair before age 8 years in girls and 9 years in Boys**

• In girls premature pubarche may proceed development of clinical
• ovarian androgen excess in adolescence.

Androgen Excess

- Androgen excess seems to occur more quickly if there is evidence of low birth weight
- How/Why?
- Reduced fetal growth
  - Followed by **post-natal catch up** in height and weight

- Hyperinsulinemia appears to be factor in the cascade
Androgen Excess

• What do we do?

• Look for girls with low birth weight and early puberty

• They may develop faster with a final height that is moderately reduced

• In these patients, metformin may help

How will metformin help?

• Can slow down the ovarian hyperandrogenism
• Normalize body composition and excessive visceral fat
• Delay pubertal progression without “hurting” the bones such that adult height may be improved

PCOS - It’s complicated!!!

- More than 70 candidate genes which may be related to the etiology of PCOS

All pre-teens (boys and girls)

• Important to see how the patient feels about the acne, as their concerns may be different from the parents/caregivers.
Treatment of Acne
Quick Pearls...
Hints from the pediatric guidelines

• Grade acne
  • Mild/Moderate/Severe
  • Clinically, Noninflammatory/Inflammatory
Developing Algorithms

• **Inflammatory Acne**
• Often times needs a systemic agent
  • Oral antibiotics
  • Isotretinoin
  • Hormonal therapy rare in the age groups we are discussing
Developing algorithms

• Oral Antibiotics alone substandard care
• Should be combined with Benzoyl Peroxide and/or Retinoid
Developing Algorithms

• Know when to refer
• Scarring
• Resistant acne
• Very inflammatory
MILD ACNE

• Mild acne – topicals may suffice
• Benzoyl Peroxide or Retinoid
• Combination Products possibly including topical antibiotic
MODERATE ACNE

• Moderate acne
  • **Start with a combination therapy**
  • Use oral antibiotics
  • Consider oral isotretinoin
  • Hormonal therapy rarely
SEVERE ACNE

• Severe acne
  • Use combination therapy AND systemic medications (oral antibiotics and/or hormonal therapy, rarely)
  • Consider Isotretinoin
Developing Algorithms

• Inadequate response
  • Change formulations
  • Add what you hadn’t used previously
  • Change oral antibiotics
• Females remember hormonal manipulation – rare in this age group