Pediatric Dermatology
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Vascular Anomalies Symposium: Classification, Clinical Challenges and Management Update

• Arteriovenous Malformations (Dra. Baselga)
  • CM-AVM Syndrome:
    • AD; Variable expressivity
    • 78% white halo / 75% dominant stain
    • Genetics:
      • 50% of patients: mutation in RASA
    • Mutations in EPHB4:
      • Multiple telangiectasias
      • CM with pale central zone
Vascular Anomalies Symposium: Classification, Clinical Challenges and Management Update

- Arteriovenous Malformations
(Dra. Baselga)
  - CM-AVM Syndrome: Really Capillary Malformations?
    - Histopathology
    - Ultrasounds
The Big C’s: Children, Cancer, and Cutaneous Complications

- Skin cancer surveillance after cancer therapy: When to worry
  (Dr. Coughlin)

Patients acquire several risk factors for skin cancer during cancer therapy
- Chemotherapies
- Radiation
- Hematopoietic stem cell transplant
- GvHD
- Antifungal therapy (voriconazole)
- Sun exposure
- Time
The Big C’s: Children, Cancer, and Cutaneous Complications

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Gathering data

• Childhood Cancer Survivor Study (US and Canada, diagnosed 1970-1999 at <21yo)
• BCC, SCC, melanoma rates increased in cancer survivors
• Over 40% of patients with NMSC had >1


**Temporal Trends in Treatment and Subsequent Neoplasm Risk Among 5-Year Survivors of Childhood Cancer, 1970-2015.**

The Big C’s: Children, Cancer, and Cutaneous Complications

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Chemotherapies increase skin cancer risk, but radiation therapy is a bigger risk factor

- Radiation with or without chemotherapy: risk increases with each Gray of radiation exposure
- Decreased radiation doses → decreased risk for NMSC

Cavalier. BMT. 2006;37:1103-1108.
The Big C’s: Children, Cancer, and Cutaneous Complications

- Skin cancer surveillance after cancer therapy: When to worry (Dr. Coughlin)
  - Risk for NMSC increases with duration and dose of voriconazole
  - Increases the risk for SCC among solid organ transplant recipients & allogeneic hematopoietic cell transplantation
  - Mechanism of increased phototoxicity and SCC with voriconazol: Unclear

Effect of voriconazole on risk of nonmelanoma skin cancer after hematopoietic cell transplantation.

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Neoplasms after cancer therapy are declining

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<tbody>
<tr>
<td>Age at primary diagnosis, mean (SD), y</td>
<td>7.7 (6.0)</td>
<td>8.4 (5.8)</td>
<td>7.6 (5.8)</td>
<td>7.4 (6.2)</td>
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<td>Subsequent neoplasms, n</td>
<td>3115</td>
<td>2018</td>
<td>902</td>
<td>195</td>
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<tr>
<td>Subsequent malignant neoplasm, n (%)</td>
<td>1026 (34.0)</td>
<td>523 (25.9)</td>
<td>364 (41.6)</td>
<td>139 (72.0)</td>
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<tr>
<td>NMSC, n (%)</td>
<td>1856 (58.5)</td>
<td>1349 (66.8)</td>
<td>470 (50.6)</td>
<td>37 (18.8)</td>
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The Big C’s: Children, Cancer, and Cutaneous Complications

- Skin cancer surveillance after cancer therapy: When to worry
  (Dr. Coughlin)

Patients have more time to develop skin cancer

- More years post-treatment
  - France: survival increased from 25% in the 1970s to 75% in 2000
  - United States: 5-year survival increased from 58% in the 1970s to 80% in the 2000s
- Pediatric cancer incidence increasing by about 0.6% per year in the US

Cancer.org
Acco.org
Skin cancer surveillance after cancer therapy: When to worry
(Dr. Coughlin)

Skin cancer typically occurs many years after pediatric cancer therapy

- Increased risk jumps at age 30 (age-adjusted RR 22.9; RR 6.0 in multiple regression analysis)
- In a CCSS cohort of patients who developed BCC, 83% occurred from the ages of 20-39

The Big C’s: Children, Cancer, and Cutaneous Complications

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  - Performed skin self-exam 47.9%
  - Physician skin exam 30.9%
  - Prior discussion about skin cancer 60.3%
- Patients more likely to wear hats (34.5 vs 20.7%)
- NO DIFFERENCES in wearing sunglasses, covering shoulders, frequency of using sunscreen, staying in the shadow...

References:

Skin Cancer Surveillance Behaviors Among Childhood Cancer Survivors.
Stapleton JL1,2,3, Tatum KL1, Devine KA1,2,3,4, Stephens S1, Masterson M1,5, Baig A3, Hudson SV1,3,4, Coups EJ1,2,3.

Sun Exposure and Protection Habits in Pediatric Patients with a History of Malignancy.
Levy-Sitrara Y1, Cohen R2, Ben Ami M1, Yeshayahu Y1, Tamam Y2, Modan-Moses D1.
The Big C’s: Children, Cancer, and Cutaneous Complications

- Skin cancer surveillance after cancer therapy: When to worry (Dr. Coughlin)
- Need of education (patients, parents and providers) about risk, recognition and prevention
The Big C’s: Children, Cancer, and Cutaneous Complications

- Skin cancer surveillance after cancer therapy: When to worry
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https://pedsderm.net/for-patients-families/patient-handouts/#PediatricSkinCancer

http://survivorshipguidelines.org/pdf/healthlinks/English/skin_health_Eng.pdf

Health Link

Healthy living after treatment of childhood cancer

Skin Health after Childhood Cancer
The Big C’s: Children, Cancer, and Cutaneous Complications

- Skin cancer surveillance after cancer therapy: When to worry
  (Dr. Coughlin)
Highlights From the Medical and Pediatric Literature

• What’s new in the pediatric literature 2017?
  (Dr. Pride)

• **Probiotics and Atopic Dermatitis**
  • Randomized, double-blind controlled trial of lactobacillus rhamnosus (10 billion CFU) supplementation for the first six months of life in high risk infants
  • Eczema at two years and asthma at five years slightly lower in the intervention group but not statistically significant
  • High breast feeding incidence which may exceed probiotic effect, JAMA Dermatol article –probiotic mix matters

Cabana MD, et al. Early probiotic supplementation for eczema and asthma prevention: a randomized controlled trial. *Pediatrics* 2017;140:e20163000
Highlights From the Medical and Pediatric Literature

• What’s new in the pediatric literature 2017?
  (Dr. Pride)

• Laboratory monitoring and Isotretinoin
  • Rare laboratory abnormalities; If happen, early in therapy
  • No need for CBC, UA, renal function
  • TG, cholesterol, AST, ALT: At baseline, 1month, 2months


Laboratory Monitoring During Isotretinoin Therapy for Acne: A Systematic Review and Meta-analysis.
Lee YH¹, Schramitz TP², Muscat J³, Chen A³, Gupta-Elera G², Kirby JS⁴.


Isotretinoin Laboratory Test Monitoring--A Call to Decrease Testing in an Era of High-Value, Cost-Conscious Care.
Shinkai K¹, McMichael A², Linos E¹.
Highlights From the Medical and Pediatric Literature

- What’s new in the pediatric literature 2017?
  (Dr. Pride)

  - Dietary Supplements, Isotretinoin, and Liver Toxicity
    - Retrospective report of 8 patients with elevated transaminase level prior or during isotretinoin therapy
    - All were using protein supplements, creatine or green tea
    - Alcohol use, viral infections, very vigorous exercise causing muscle breakdown not present
    - Improved with stopping supplements

- BEST TO STOP SUPPLEMENTS DURING ISOTRETINOIN THERAPY TO AVOID A CONFUSION AND UNNECESSARY CESSION OF THERAPY


*Dietary Supplements, Isotretinoin, and Liver Toxicity in Adolescents: A Retrospective Case Series.*

DeKlotz CM1, Roby KD2, Friedlander SF3.
Highlights From the Medical and Pediatric Literature

• What’s new in the pediatric literature 2017?
  (Dr. Pride)

  • Isotretinoin use and risk of depression
    • Meta-analysis of 31 studies that met inclusion criteria
    • Mean depression scores significantly decreased from baseline
    • Reassuring but not proof that there is no association in some teenagers

  Isotretinoin treatment for acne and risk of depression: A systematic review and meta-analysis.
  Huang YC\(^1\), Cheng YC\(^2\).

• ‘Take a typical group of 100 teenagers with severe enough acne to warrant isotretinoin therapy’
  • 40 of them stay at their baseline orneriness
  • 40 of them stay at their baseline pleasantness
  • 16 of them come out of their shell and are happy
  • 4 of them become depressed during therapy
Highlights From the Medical and Pediatric Literature

• What’s new in the pediatric literature 2017?
  (Dr. Pride)

  • Isotretinoin use and olfactory function
    • There is evidence that retinoic acids play a role in the recovery of olfactory function following injury in mice
    • 45 patients with acne treated with isotretinoin studied at baseline and third month of therapy using Sniffin’ Stick Test
    • Score increased from 8.7 to 9.5 (p<0.001)
    • Hyposmia 40% to 24%, normosmia 60% to 75%


Effects of isotretinoin on the olfactory function in patients with acne.
Kartal D¹, Yaşar M², Kartal L², Özcan I², Borlu M¹.