The Red Face
A Case Based Approach

Jessica Howard MD, CCFP, Dip P Derm
Disclosure

• Dr. Jessica Howard

• Relationships with commercial interests
  • Grants/Research Support: None
  • Speaker’s Bureau/Honoraria: Galderma, Purdue, Lundbeck
  • Consulting Fees: None
  • Other: None
Disclosure

This program has received financial support from OCFP in form of honoraria.

Potential for conflicts of interest:
None
Mitigating Potential Bias

• Literature Review

• No consultation with Pharma regarding content of presentation other than pricing and release dates
Objectives

• Develop an approach to assessing the red face

• Review common pathologies that cause a red face seen in family medicine

• Review treatment strategies, old and new
The Red Face

• Acute? Chronic?
• Well? Sick?
• Local? Widespread?
Case 1
Sarah is a 34 yo woman who complains of a red bumpy face, worse around her periods. She states that she has always had a little acne, but it has become worse in recent years.

She is otherwise healthy, on no meds and has NKDA. She currently is using Proactiv with some benefit although it costs her a fortune.
The Red Face
Acne

4 Pathogenic Factors

- Release of inflammatory mediators into the skin
- P. acnes follicular colonization
- Alteration in the keratinization process
- Sebum production by the sebaceous gland
## Classification

<table>
<thead>
<tr>
<th>Acne Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mild Inflammatory Acne</strong></td>
<td>• Comedones plus papules and pustules</td>
</tr>
<tr>
<td></td>
<td>• Non-inflammatory lesions</td>
</tr>
<tr>
<td></td>
<td>• Few inflammatory lesions</td>
</tr>
<tr>
<td><strong>Moderate Inflammatory Acne</strong></td>
<td>• Papules and pustules</td>
</tr>
<tr>
<td></td>
<td>• Non-inflammatory lesions</td>
</tr>
<tr>
<td></td>
<td>• Several inflammatory lesions</td>
</tr>
<tr>
<td><strong>Persistent Acne</strong></td>
<td>• Moderate acne unresponsive to conventional therapy</td>
</tr>
<tr>
<td><strong>Severe Acne</strong></td>
<td>• Numerous inflammatory pustules</td>
</tr>
<tr>
<td></td>
<td>• ± Nodules, cysts</td>
</tr>
<tr>
<td></td>
<td>• Ongoing scarring, drainage, sinus tracts</td>
</tr>
<tr>
<td></td>
<td>• Adverse psychosocial impact</td>
</tr>
<tr>
<td></td>
<td>• Inadequate therapeutic response</td>
</tr>
</tbody>
</table>
Differential Diagnosis

- Rosacea
  - No comedones
- Perioral Dermatitis
  - Often steroid related, eczematous
- Folliculitis
  - Gram –ve, often related to long term Abx use
Treatment

The Red Face

Obstruction of pilosebaceous duct by cohesive keratinocytes, sebum, and hyperkeratosis

Drugs that normalize pattern of follicular keratinization
- Adapalene
- Isotretinoin
- Tazarotene
- Tretinoin

Compacted cells, keratin, and sebum

Proliferation of Propionibacterium acnes

Drugs with anti-inflammatory effects
- Antibiotics (by preventing neutrophil chemotaxis)
- Corticosteroids (intraleisonal and oral)
- NSAIDs
- Dapsone

Rupture of follicular wall

Inflammation

Increased sebum production

Drugs that inhibit sebaceous gland function
- Antiandrogens (e.g., spironolactone)
- Corticosteroids (oral, in very low doses)
- Estrogens (oral contraceptives)
- Isotretinoin

Drugs with antibacterial effects
- Antibiotics (topical and oral)
- Benzoyl peroxide
- Isotretinoin (indirect effect)
- Dapsone

Hair
Treatment Notes

• Retinoids are first-line in acne
• Don’t wait until the patient asks for help
• Make sure you see these patients in follow up
• NEVER use retinoids in pregnancy (even topical)
• Use combo creams/gels where possible
• Never use topical and systemic ABx together - resistance
• DO NOT UNDER-TREAT – once damage is done, it is really difficult (and expensive) to reverse
A word about skin care

• Discourage astringents, scrubs
• Advise soap substitutes and moisturizers with sunscreen and/or ceramides
• Expensive does not equal good
New Products for Mild-Moderate Acne

• Tactuo
  • BP + adapalene
• Aczone
  • dapsone 5% gel
• Biacna
  • clindamycin and tretinoin
Old Favourites for Mild-Moderate Acne

• Clindoxyl, Benzaclin
  • BP + clindamycin
• Differin, Differin XR
  • adapalene
• Steivamycin
  • erythromycin + tretinoin
Isotretinoin

- **Before treatment**
  - Lengthy discussion re possible side effects (DOCUMENT!!!)
    - Teratogenicity, dryness, mood changes, hepatitis, pseudotumour cerebri, headaches, muscle pain
  - Baseline bloods (CBC, lytes, BUN, Cr, LFTs, Chol)
  - Birth control X 2
  - In women – 2 neg preg tests +/- start after menses
  - Some MDs have pt sign consent
- **During Treatment**
  - Monthly visits inc bloods
    - Stop when target cumulative dose (120-150 mg/kg/course) is achieved and symptoms are resolved
Check out my guns.

This is one of the side effects of the drugs I’ve been taking to get acne and shrink my nuts.

Harry & The Goozle
Case 1
Sarah is a 34 yo woman who complains of a red bumpy face, worse around her periods. She states that she has always had a little acne, but it has become worse in recent years.

She is otherwise healthy, on no meds and has NKDA. She currently is using Proactiv with some benefit although it costs her a fortune.
The Red Face
Thoughts?
Case 2
Steve is a 60 yo man who presents to your office with a 3 day history of a warm, red eruption on his cheek. Prior to the appearance of the rash, he had a fever and chills.

He is hypertensive and is on irbesartan. He has no known drug allergies.
The Red Face
Red Face ‘Emergencies’

- Erysipelas
- Cellulitis
- Herpes Zoster
- Atopic dermatitis superinfections
  - Herpes
  - Impetiginization with bacteria
## Erysipelas vs Cellulitis

<table>
<thead>
<tr>
<th></th>
<th>Erysipelas</th>
<th>Cellulitis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Quite Sick</strong></td>
<td></td>
<td>Not so sick</td>
</tr>
<tr>
<td><strong>Deep tissue</strong></td>
<td></td>
<td>Superficial tissues</td>
</tr>
<tr>
<td><strong>Thick, shiny, well circumscribed plaque</strong></td>
<td></td>
<td>Flat, less well-demarcated</td>
</tr>
<tr>
<td><strong>Long course Abx (at least 14 days) with gram positive coverage</strong></td>
<td></td>
<td>Shorter course, broader spectrum</td>
</tr>
</tbody>
</table>
The Red Face
Herpes Zoster

• *Need high index of suspicion*
• Reactivation of VZV
• Unilateral

• Initial symptoms such as swelling, erythema can be very subtle
• Pain and pruritis precede vesicles by 2-3 days
• BEWARE Herpes Ophthalmicus if lesions affect CN V
Treatment of Herpes Zoster

- Optho/Optom referral PRN
- If within 72 hours, treat with anti-viral such as Valcyclovir 1g TID x 7 days
- Monitor for PHN
Complications of Atopic Dermatitis

• Superinfection with
  • Bacteria
  • Herpes viruses
Complications of Atopic Dermatitis

Impetiginized AD

Eczema herpeticum
Treatment of Impetiginized AD

• *Need to treat AD AND infection*

• Eruption will not resolve unless both issues are treated

• Often requires oral antibiotics and mid-potency steroids such as cephalexin and betamethasone valerate 0.05% TID for 1-2 weeks

• Mild cases can benefit from combinations such as Fucidin HC
Treatment of Eczema Herpeticum

• *Need to treat AD AND infection*

• Antiviral such as acyclovir 25 mg/kg/day divided 5ID x 10 days

• Protect against further infection with bacteria with oral or topical ABx
Case 2
Steve is a 60 yo man who presents to your office with a 3 day history of a warm, red eruption on his cheek. Prior to the appearance of the rash, he had a fever and chills.

He is hypertensive and is on irbesartan. He has no known drug allergies.
The Red Face
Thoughts?
Case 3
Cindy is a 54 yo caucasian woman who complains of a very red face, worse in the last 10 years. She finds it is worse when she drinks alcohol and eats spicy foods. She also complains of pimples.

Cindy is otherwise healthy and is on no medications. She has NKDA. She has been using many OTC anti-redness products with no great effect.
Rosacea

• History of facial flushing, blushing
• Inflammatory papules, pustules (no comedones)
• Erythema, telangiectasia

Pathophysiology

• Exact etiology unclear
• Chronic inflammation a key factor
Rosacea Subtypes

- Erythematotelangiectatic
- Papulopustular
- Phymatous
- Ocular
Treatment

Patient Education – avoidance of triggers, gentle skin care

Topical Agents

Oral agents

Laser & Phototherapy (vascular)

Surgery
Topicals

• OD
  • Metrogel 1% (ODB)
• BID
  • Metrocream
  • Metrogel 0.75%
  • Metrolotion
  • Noritate
  • Rosasol
  • Finacea
Systemic Therapies

- Tetracyclines eg Doxy 100 mg OD/BID
- Erythromycin (Abx resistance, GI s/e)
- Metronidazole
- Isotretinoin
What’s New

• Apprilon
  • 40 mg OD
  • Slow release doxycycline (30mg IR+10mg DR)
  • Anti-inflammatory, not anti-microbial
  • Fewer s/e such as photosensitivity, GI
A note about lasers

• Intense Pulsed Light (IPL)
  • Very effective for telangectasias
  • Done in many medi-spas
  • Encourage pts to attend a reputable clinic
B IS FOR BOTOX
An Alphabet Book for the Middle-Aged
Ross & Kathryn Petras
Case 3
Cindy is a 54 yo caucasian woman who complains of a very red face, worse in the last 10 years. She finds it is worse when she drinks alcohol and eats spicy foods. She also complains of pimples.

Cindy is otherwise healthy and is on no medications. She has NKDA. She has been using many OTC anti-redness products with no great effect.
Thoughts?
Case 4
Errol is a 75 year old farmer with multiple scaly erythematous plaques on his temples, forehead and ears. The lesions become more pronounced in the summer.

He has no medical conditions and is on no medications, perhaps because he never visits the doctor.
Actinic Keratoses (Solar Keratoses)

- Related to sun damage
- Potential to transform into SCC 5-10%
- 60-80% of SCC arise in AK
- Key to Dx is to feel the patient’s skin
Traditional Treatments of AKs

- Liquid nitrogen  
  Billing: Z117 for < 4 lesions, Z119 for 5+ lesions

- ‘quick and dirty’, great for 1 or 2 lesions

- Open spray, ice field maintained for 5-15s, 1-2 mm margin, 1 FTC

- More lesions? Field Defects?
<table>
<thead>
<tr>
<th></th>
<th>FIRST LINE</th>
<th>Actinic Keratosis</th>
<th>Superficial BCC</th>
<th>SCC in situ</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-FU</td>
<td></td>
<td>Efudex 5%</td>
<td>BID x 4 wks</td>
<td>BID x 4 wks</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>BID x 4 wks</td>
<td>BID x 4 wks</td>
</tr>
<tr>
<td>Imiquimod</td>
<td>Aldara 5%</td>
<td>2x /wk for 16 wk</td>
<td>5x/wk for 6 wk</td>
<td>2x/wk for 16 wk</td>
</tr>
<tr>
<td></td>
<td>Zyclara 3.75%</td>
<td>Up to 2 packets OD for 2 Tx cycles of 2 wks separated by 2 wk no Tx</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ingenol Mebutate</td>
<td>Picato 0.015%</td>
<td>OD x 3 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Picato 0.05%</td>
<td>OD x 2 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Retinoid</td>
<td>Retin-A 0.05%</td>
<td>BID x 16 wks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PDT or Ionizing Radiation</td>
<td>Refer</td>
<td>Refer</td>
<td>Refer</td>
</tr>
</tbody>
</table>

1 Warn pt about erythema and ulceration  
2 Order 12 sachets, 24 is too expensive  
3 Face  
4 Body
5-FU (Efudex 5%)

• Topical chemotherapy – destroys tumour cells by interfering with DNA and RNA

• Cheap ($52 for 40g tube), ODB covered

• Local reactions include pain, pruritis, burning, hyperpigmentation, often Tx prohibitive

• May improve if Tx with HC 1% cream x 15 min before application
Imiquimod (Aldara 5%, Zyclara 3.75%)

- Immunomodulator – induces cytokines with indirect antiviral and anti-tumoral effect
- NOT cheap ($ 220/$157 for 12 sachets), not ODB covered
- Local reactions – perhaps less so than 5-FU, but possibility of flu-like systemic side effects
Ingenol Mebutate (Picato)

- Plant derivative (E. peplus or ‘Spurge’)
- 2 strengths (0.015% - face, 0.05% - body)
- Very quick course (2 to 3 days)
- 2 mechanisms of action
  - Direct induction of tumor cell necrosis via intracellular calcium spike
  - PKC dependent inflammatory response
Retinoids

• Can use while waiting for other treatments
  • actinic cheilitis
• Often irritating, studies not all conclusive
• Perhaps play a more preventative role
Photodynamic Therapy

• Tx begins with topical photosensitizer (ALA or MLA)
• Exposure to (red or blue) light causes reactive oxygen species which destroy dysplastic cells
• Issues with access in some centres
Ionizing Radiation

• Last ditch effort
• Wide areas, palliative
• Not widely used
How do I choose which one to use?

• Patient Factors
  • Cost
  • Adherence, ease of treatment

• Disease factors
  • Local vs. widespread
  • Pathology
Errol is a 75 year old farmer with multiple scaly erythematous plaques on his temples and ears. The lesions become more pronounced in the summer.

He has no medical conditions and is on no medications, perhaps because he never visits the doctor.
Thoughts?
Case 5

The Red Face
Barb is a 40 yo woman who presents to you with a purplish red eruption around her eyes. She has been feeling more tired lately and has noticed that she can’t lift as much weight at the gym.

She was previously healthy and is on no medications.
The Red Face
Facial dermatological manifestations of systemic disease
When to consider

• Epidemiology fits – young females, geriatrics
• Associated symptoms such as fever, joint pain, muscle weakness
• Facial rashes plus other skin manifestations
• It just doesn’t fit!
Possible Diagnoses

- Systemic Lupus Erythematosus
Possible Diagnoses

• Dermatomyositis (paraneoplastic, primary)
Work up

• Don’t order a whole bunch of expensive stuff
• Biopsy
  • Histology
  • Immunoflourescence – 1-2 cm away from lesions in normal skin ***special medium and req
• CBC, Cr, CRP, ANA, U/A
• Leave the big money work up to rheum
Case 5
Barb is a 40 yo woman who presents to you with a purplish red eruption around her eyes. She has been feeling more tired lately and has noticed that she can’t lift as much weight at the gym.

She was previously healthy and is on no medications.
The Red Face
Thoughts?
Questions?

Dr. Jessica Howard
c/o Middlesex Centre Regional Medical Clinic
36 Heritage Drive Box 160
Ilderton, ON
N0M 2A0
Phone (519) 666-1610
Fax (519) 666-0281
dr.jessica.howard@gmail.com

Clinic located at South Huron Hospital – Exeter, ON
References

“What fits your busy schedule better, exercising one hour a day or being dead 24 hours a day?”