Dermatologic Procedures

Shane Silver MD FRCPC

Faculty/Presenter Disclosure

- **Faculty:** shane silver

- **Relationships with commercial interests:**
  - **Not applicable for this talk**
  - **Have been on Advisory boards for Elie Lillie, Jansen, Amgen, Abbvie**

Disclosure of Commercial Support

- **No commercial support**
- **<u>Potential for conflict(s) of interest</u>:**

  Not applicable to this talk

Mitigating Potential Bias

Not applicable to this talk

Copyright Declaration

- “This copy is provided exclusively for research purposes and private study. Any use of the copy for a purpose other than research or private study may require the authorization of the copyright owner of the work in question. Responsibility regarding questions of copyright that may arise in the use of this copy is assumed by the recipient.”

Overview

- Cryosurgery
- Intralesional Triamcinalone
- Curretage
- Biopsy techniques
- Practice biopsy techniques and suturing
- Pics of lesions/rashes – where to biopsy
- Hyperhidrosis

Cryosurgery

- Synonymous with cryotherapy
- Selective necrosis of the tissue
- What are the cryobiologic effects and tissue reactions after freezing.
- It is -195.8 C
- OTC – uses other agents like Fluorenated hydrocarbons, dimethyl ether, carbon dioxide, and nitrous oxide (not nearly as effective)

cryosurgery

- Most histofreeze will cool down to -55 to -70 degrees.
- Dimethyl ether and propane (in histofreezer and verruca freeze as well)

Cryosurgery

- Freezing causes intracellular and extracellular ice crystal formation, disrupting cell membranes, Ph changes, impairment of homeostatic functions
- Intracellular ice causes more damage by rapid cooling
- Extracellular ice is by slow cooling and causes less damage

Cryosurgery

- Repeated Freeze thaw cycles can cause more damage
- Skin is completely frozen at -50 to -60 C
- Collagen and cartilage is fairly resistant to freezing so wound healing is usually good
- Many benign, Precancerous and Insitu lesions can be treated.

Cryosurgery

- Contraindications :
- Cold urticaria
- Cyoglobulinemia
- Darkly pigmented skin – relative
- Severe raynauds
- Poor circulation distal areas that are treated.

Cryosurgery

- Considerations
  - Freeze time – duration of cooling
  - Short for benign lesions
  - 4-10 seconds for actinic keratosis (text book I go on the shorter side)
  - Longer for insitu disease
  - lateral freeze spread – past the lesion

Cryosurgery

- Considerations cont.
  - Freeze thaw cycle – single usually ok for benign thin lesions
  - Double freeze thaw for thicker or malignant lesions

Cryosurgery

- Most common techniques
- Dipstick – cotton tip applicator
- Cryogun

- You may want to debulk thick lesions, prior to liquid nitrogen.
- Thick crust of a hyperkeratotic actinic or verrucae should be debulked

Cryosurgery

- Complications
  - Scarring
  - Post inflammatory hyper/hypopigmentation
  - Infection
  - Edema of eyelids
  - Tendon injury, neuropraxia
  - Retraction of tissue (ectropion)

Intralesional Triamcinalone

- AKA Kenalog injections
  - 40mg/cc or 10mg/cc
  - Dilute to desired concentration
- Can treat many things
  - Localized alopecia areata
  - Cysts
  - Keloids
  - Scarring alopecia
  - Localized psoriasis
  - Granuloma annulare
  - Pyoderma gangrenosum

Intralesional Triamcinalone

- Dose is very important
- Generally use 2.5-5mg/cc in most situations and definitely the lower dose on the face
- Technique
  - Dilute the concentration of the vial down
  - Use 30 guage needle
  - **Stay intradermal**
  - Inject 1cm apart for injections
  - 0.1cc per poke
  - Make a bleb
  - I never use more than 3cc at one sitting if 5mg/cc

Electrosurgery

- Electrocautery – used as a “hot element” technique
  - Metal wire is heated by resistance to the flow of direct current electricity
  - Like a toaster oven or range on an oven
- This is different than electrosurgery – high frequency alternating current

Electrosurgery

- Electrofulguration/Electrodesiccation
- Latin fulgur = lightening (does not contact the tissue
- Electrodessication – contacts the tissue
- Monopolar – one tissue contacting tip at the end of the electrode
- Bipolar – two tissue contacting tips at the end of the electrode

Electrosurgery

- Monoterminal – use of the treatment electrode without a dispersive electrode (ground plate)
- Biterminal – the use of the electrode with a dispersive electrode (ground plate)
- Electrodesiccation and electrofulguration are always monoterminal procedures
- Electrocoagulation and electrosection work better as biterminal procedures

Electrosurgery

- Lesions treated with electrodessication/electrofulguration
  - Acrochordons
  - Actinic keratosis
  - Cherry angiomas
  - Hemostasis with simple excisions
  - Verrucae
  - Seborrheic keratosis
  - Sebaceous hyperplasia
  - EDC - BCC

Electrosurgery

- Precautions – prep the skin NOTE alcohol can ignite!!!!

Electrodesiccation

- Usually for epidermal lesions
- Spark gap technique (electrofulguration)
- Little to no scarring
- Monoterminal
- I use it most for acrocordons, EDC and excisions

EDC

- Great for BCC in certain locations
- Confirm with biopsy first
- Great for trunk and concavities
- Local anesthetic
- Curettes come in various sizes
- Put sharp end with moderate pressure over the BCC and scrape in all directions
- Electrodessicaton
- Repeat x2 total

Verrucae - treatment

- HPV – more than 100 subtypes
- Nomenclature
  - Vurrucae vulgaris – common warts
  - Verrucae plantaris – plantar warts
  - Verrucae planae – flat (plane warts)
  - Condyloma acuminata- genital warts

Table 79.1 Clinical manifestations and associated HPV types.

CLINICAL MANIFESTATIONS AND ASSOCIATED HPV TYPES		
	Frequently detected	**Less frequently detected**
Skin lesions		
• Common, palmar, plantar, myrmecial and mosaic warts	1, 2, 4	26, 27, 29, 41, 57, 60, 63, 65
• Flat warts	3, 10	28, 29
• Butcher's warts	7, 2	1, 3, 4, 10, 28
• Digital squamous cell carcinoma and Bowen's disease	16	34, 35
• Epidermodysplasia verruciformis (EV)	3, 5, 8	9, 12, 14, 15, 17, 19–25, 36–38, 46, 47, 49, 50, etc.
• EV – squamous cell carcinoma	5	8, 14, 17, 20, 47
Mucosal lesions		
• Condylomata acuminata	6, 11	42–44, 54, 55, 70
• High-grade intraepithelial neoplasias (including cervical condylomata plana, bowenoid papulosis, erythroplasia of Queyrat)	16	18, 31, 33–35, 39, 40, 51–59, 61, 62
• Buschke–Löwenstein tumor	6, 11	
• Recurrent respiratory papillomatosis, conjunctival papillomas	6, 11	
• Heck's disease (focal epithelial hyperplasia)	13, 32	

Verrucae – Treatment (in office)

- Liquid nitrogen

Verrucae – treatment In office

- Liquid nitrogen
- Cantherone - .7% cantheradin
  - Beetle juice
  - Apply directly to the wart surface – tape over top
  - Wash in 5-6 hours
  - PLUS – sal acid 30%, 2% podophyllin, 1% cantharadin
    - Wash in 5-6 hours
  - DORMER – Cantherone and Cantherone P are for physician use only. Should not be prescribed to patient under any cicumstance.

Verrucae – Treatment In office

- Liquid nitrogen
- Cantherone/ cantherone plus
- Immunotherapy
  - Squaric acid
  - DPCP
  - Candida antigen

Verrucae - Treatment

- Immunotherapy
- Squaric acid – apply 2% to inner arm for sensitization
- Patient then appies .5% to warts at home 3x/week (only hand and foot warts)
- If not effective increase dose up to 2%

Verrucae - Treatment

- DPCP – Diphencyclopropenone
- Sensitize with 2%
- Depending on the reaction will be the dose you put on the warts - .0001 – 4%
- Once in office treatment shows the appropriate reaction give them Prescription to use at home weekly

Verruca - Treatment

- Candida antigen
- Sensitize on the forearm
- If reaction occurs then inject .02cc into one wart
- Repeat as required every 2-4 weeks

Verrucae – Treatment In office

- Liquid nitrogen
- Cantherone/ cantherone plus
- Immunotherapy
- Bleomycin injections

Verrucae - Treatment

- Bleomycin - .5u/cc
- Inject into wart very superficial
- Blanching effect
- Painful , black , necrosis afterwards
- Do not do distal tips of digits/periungual
- Do not use if poor circulation/Raynauds

Verrucae – Treatment In office

- Liquid nitrogen
- Cantherone/ cantherone plus
- Immunotherapy
- Bleomycin injections
- Surgical
- EDC
- Trichloroacetic acid 10% for flat warts, higher concentrations for hand and plantar warts

Verrucae – Treatment In office

- Liquid nitrogen
- Cantherone/ cantherone plus
- Immunotherapy
- Bleomycin injections
- Surgical
- EDC
- Trichloroacetic acid
- Laser ND:Yag 1064, PDL

Other Adjunctive Treatments

- Topical
  - Salicylic Acid
  - Glutaraldehyde
  - Fluorouracil
  - Imiquimod
  - Tretinoin
- Systemic
  - Acitretin
  - Zinc

DUCT TAPE????

Condyloma acuminata

- 40 strains that cause this
- 6 and 11 – 90% and mainly non-carcinogenic
- 16,18,31,33,45,52,58 more commonly carcinogenic
- ¾ of individuals have been infected at some time
- 90% of women show no trace of the virus

Condyloma acuminata

- Vaccines – cervarix (16 and 18), gardasil, gardasil – 9
- 6 and 11, 16,18
- 6,11,16,18,31,33,45,52,58
- Associated – 80-90% of anal cancer
- 40% vulvar cancer
- 40-50% of penile cancer
- 25-30% of oropharyngeal cancer

condyloma

- Canadian cancer society recommendation
  - Girls and women b/w ages 9-45 should be vaccinated
  - Boys and young men b/w 9-26

- Research shows vaccines will last at least 8-9 years (booster?)

condyloma – Treatment In office

- Liquid nitrogen
- Surgical
- EDC
- Trichloroacetic acid
- Laser ND:Yag 1064, PDL
- podophyllin

Format: Abstract Send to

J Infect Dis. 2013 Nov 1;208(9):1391-6. doi: 10.1093/infdis/jit360.

Efficacy of the HPV-16/18 AS04-adjuvanted vaccine against low-risk HPV types (PATRICIA randomized trial): an unexpected observation.

Szarewski A[1], Skinner SR, Garland SM, Romanowski B, Schwarz TF, Apter D, Chow SN, Paavonen J, Del Rosario-Raymundo MR, Teixeira JC, De Carvalho NS, Castro-Sanchez M, Castellsagué X, Poppe WA, De Sutter P, Huh W, Chatterjee A, Tjalma WA, Ackerman RT, Martens M, Papp KA, Bajo-Arenas J, Harper DM, Torné A, David MP, Struyf F, Lehtinen M, Dubin G.

Author information

Abstract

BACKGROUND: Public Health England has reported a decrease of up to 20.8% in new diagnoses of external genital warts (GWs) among women aged <19 years since the national vaccination program with the human papillomavirus (HPV)-16/18 AS04-adjuvanted vaccine began in 2008. A post hoc analysis of the phase III PATRICIA (PApilloma TRIal against Cancer In young Adults) trial (NCT00122681) was performed to ascertain whether protection against low-risk HPV types was apparent.

METHODS: Vaccine efficacy (VE) at 48 months was assessed against 6-month persistent infection (6MPI) with low-risk HPV types in the total vaccinated cohort (TVC) and in the TVC naive (for 25 HPV types tested) populations.

RESULTS: In the TVC naive cohort, VE against 6MPI (95% confidence interval) was 34.5% (11.3 to 51.8) for HPV-6/11, 34.9% (9.1 to 53.7) for HPV-6, 30.3% (-45.0 to 67.5) for HPV-11, and 49.5% (21.0 to 68.3) for HPV-74.

CONCLUSIONS: The HPV-16/18 AS04-adjuvanted vaccine appears to have moderate efficacy against persistent infections with a number of low-risk HPV types (HPV-6/11/74), which are responsible for the majority of external GWs, and recently, antibody and cell-mediated immune response to HPV-6/11 have been observed. These findings may help to explain the decrease in external GW diagnoses seen in England.

KEYWORDS: HPV; HPV vaccine; genital warts; human papillomavirus

Xanthelasma

- This is seen in a association of hyperlipidemia in only 50% of patients

Xanthelasma

- Trichloroacetic acid 80% application

- Other treatments
  - Surgical
  - CO2 laser or Argon Laser
  - Electrocautery
  - Liquid nitrogen

Biopsy Techniques

- Site selection
  - Tumor –
  - Blister –
  - Ulcerated/necrotic lesion –
  - Rash –
  - Vasculitis –

Biopsy Techniques

- Site selection
  - Tumor – thickest part
  - Blister – Blister edge with normal skin
  - Ulcerated/necrotic lesion – edge with normal skin
  - Rash – most recent lesion
  - Vasculitis – most recent lesion

Biopsy Techniques

- Pick how deep you want to get the pathology you need
  - Superficial lesions - may only need epidermis –Mucosal melanotic papule
  - Collagen disorder – need dermis and may need to compare to normal skin – morphea
  - Panniculits - fat

Biopsy techniques

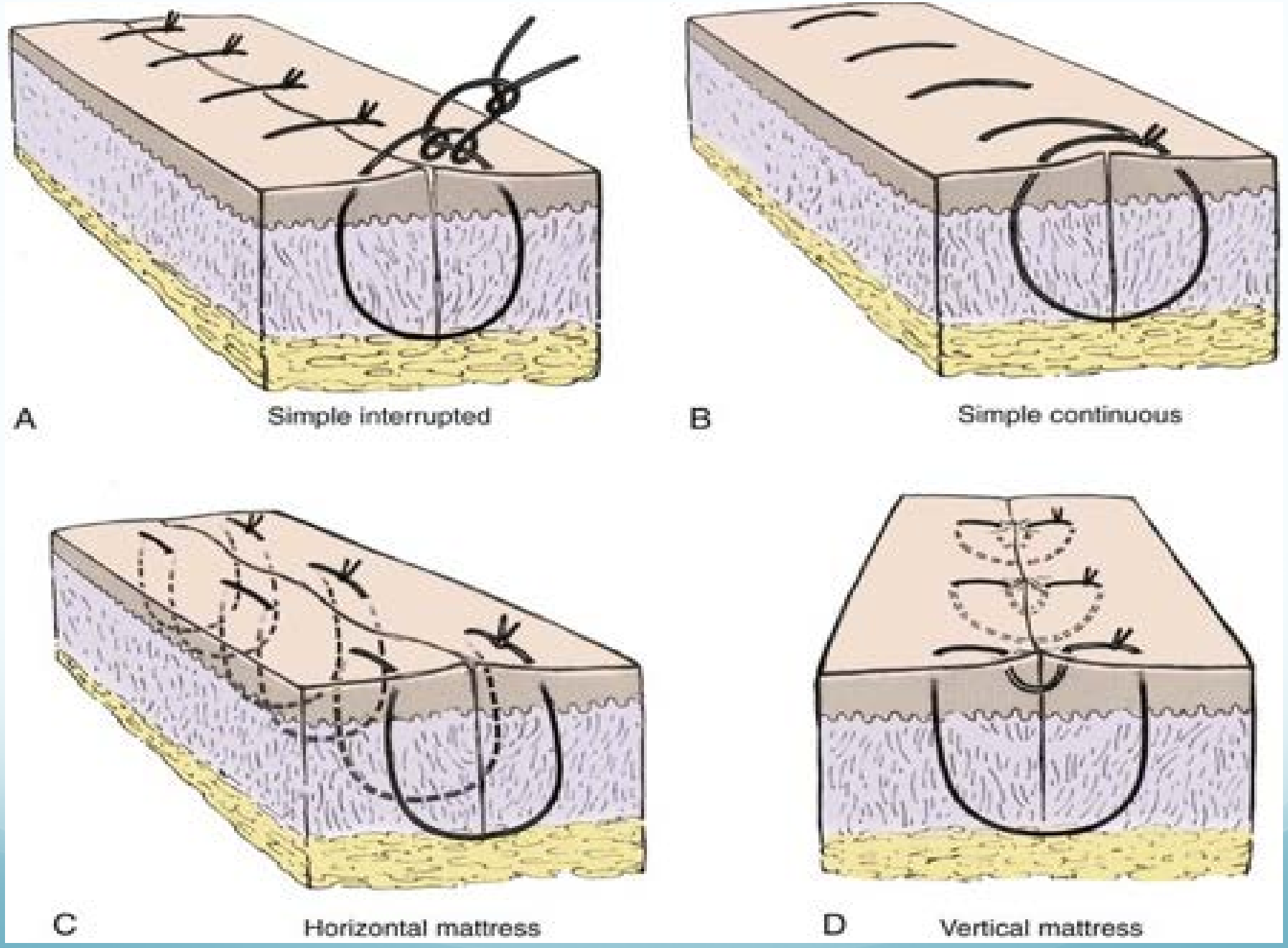
- 6 main methods
  - Curretage
  - Snip or scissors
  - Shave
  - Punch
  - Incisional
  - excisional

Specimen handling

- 10% neutral buffered formalin
- If you need Direct immunofluorescence – saline soaked guaze or in Michels medium
- Biopsy for culture – send fresh or on non – bacteriostatic saline soaked gauze
- PROTOCOL FOR TRACKING – WHAT IS YOURS??

Hemostasis

- Non- sutured biopsies – drysol, ferric chloride 10%
- Ectectrodessicaion
- Sutures -
  - Interrupted burried dermal stitch
  - Simple interupted epidermal stitch
  - Vertical mattress
  - Horizontal mattress
  - Simple running stitch


A
Simple interrupted
B
Simple continuous
C
Horizontal mattress
D
Vertical mattress

Shave biopsy

- For pathologic evaluation
- If attempted to remove the entire lesion – shave excision/ horizontal plane excision/ suacerization
- Scalpel held at 90 degrees through the epidermis and then turned horizontally
- Razor blade held in a semicurved position
- Secondary intention

Punch Biopsy

- If you need deeper dermis
- Recommended for most lesions if you don’t understand the pathology you are trying to obtain
- 3mm punch is usually adequate, occ use 4-6mm punch
- With 3mm suture generally not required anything more needs a suture

Punch Biopsy

- Disposable are the easiest to use
- Stretch the skin opposite the relaxed tension lines
- Push punch into skin and rotate (same direction not back and forth)
- Usually do not need to go up to base of hub, ½ way usually good enough
- Lift with 30 gauge or forceps and cut base

Incisional biopsy

- Large lesions
- Need subcutaneous fat
- Need normal and abnormal collagen

Excisional Biopsy

- Cure/treatment
- Diagnosis
- BCC and SCC less then 2cm need 4mm margins over 2cm need 6mm
- Pigmented lesion excise the entire lesion for biopsy with narrow margin
- Melanoma
  - In situ 5mm margin
  - Invasive to 1mm – 10mm (1 cm) margin
  - Over 1mm – 2cm +/- sentinel lymph node
- General rule is to facia all ellipse is 3:1 (legnth:width)

LETS PRACTICE

Hyperhidrosis: What is it?

- Strict definition – excessive sweating
- Local, regional or gerneralized
- Primary focal hyperhidrosis – axillae, hands, feet, face or forhead which is idiopathic

Did you know…..

- 84% of Canadians are UNAWARE there is a prescription treatment for hyperhidrosis

Diagnosis

- Criteria by Hornberger et al

At least 6 months without cause and 2 of the following

1. Bilateral and relatively symmetrical
2. Affects daily activities
3. A frequency of more than once per week
4. Less than 25 years old onset
5. A positive family history
6. Absence of night sweats

Options to consider

- Topical therapy – Aluminum salts – aluminum chloride hexahydrate
- Block the epidermal duct of the eccrine gland and induce atrophy and vacuolization of the secretory cells
- Salacylic acid can improve absorption and has its own antipersperant properties (hydrosal gel – Al 15% with 2 % salacylic acid)

Treatment Topical

- Iontopheresis
- 20-30 minutes 3-4x/wk in tap water
- Palms and soles in tap water with a current of 15-20mA
- Uses DC current
- Studies have used .05% glycopyrrolate, and botox instead of water

Systemic Anticholinergics

- Glycopyrrolate 1mg starting dose up to 10mg bid
- Paroxetine 10 mg od
- Clonidine .1mg bid
- Others propanalol, propantheline, benztropine, oxybutynin, imipramine

Surgical Treatment

- Local
- Liposuction, curettage

- Sympathetic denervation
- Compensatory sweating in 14–90% (mild) and 1.2–30.9% (severe)

How Does Botox Work?

- BOTOX® neurotoxin (Botulism toxin A) – binds to the presynaptic cholinergic NMJ receptors and prevents exocytosis of Ach

- Contraindications – secondary hyperhidrosis, blood clotting disorders, active infection at site, myasthenia gravis, lambert-eaton syndrome or ALS, pregnant or breast feeding

- Side effects – cost, H/A, myalgia, compensatory sweating in 5% (particularly the face), occ temporary weakness

Why Choose Botox?

- PROVEN EFFICACY
  - 83% reduction in sweating with Botox
  - 93% of patient very satisfied (versus 15% with topical antiperspirants)

  LASTING DURATION
  - 201-day median duration of response (6.7 months)

THANK-YOU