Vitiligo

Vasanop Vachiramon, MD.
Assistant professor
Division of Dermatology, Ramathibodi Hospital
Vitiligo

- Acquired pigmentary disorder
- Depigmented macules and patches
Prevalence

• The worldwide prevalence of vitiligo is up to ~2%
Clinical manifestations

• Asymptomatic depigmented patches and macules
Island of normal skin
Wood’s light
Clinical manifestations

• Koebner’s phenomenon (the development of lesions at sites of specifically traumatized uninvolved skin of patients with cutaneous diseases)
Classification of vitiligo

• Segmental vitiligo
• Non-segmental vitiligo
• Unclassified: mucosal, focal
Segmental vitiligo

- Mono-segmental vitiligo: most common
- Bi-segmental vitiligo
- Plurisegmental vitiligo
Non-segmental vitiligo

- Typically evolves over time (distribution, extension) often involving both sides of the body with tendency toward symmetrical distribution
  - acrofacial (face, head, hands, feet)
  - generalized
  - universal: 80-90% of BSA
- mixed vitiligo: initial SV followed by bilateral NSV patches
NSV (Generalized vitiligo)

- Face: periorbital, perioral
- Trunk, axilla, groin, umbilicus
- Extremity: elbow, wrist, hand, feet
Unclassified: mucosal vitiligo

- An isolate involvement of oral and/or genital mucosa for at least 2 years F/U
- When mucosal vitiligo occurs in the context of NSV, it is classified as NSV
- Differential diagnosis: lichen sclerosus
Unclassified: focal vitiligo

• Acquired, small, isolated depigmented lesion that does not fit a typical segmental distribution and has not evolved into NSV after a period of 2 yr

• The diagnosis should be considered only after having ruled out all other diagnoses, and a biopsy may be helpful
Pathogenesis

• Autoimmune: best supported theory
• Neurohumoral: segmental vitiligo
• Oxidative stress
• Melanocytorrhagy
Vitiligo and autoimmune diseases

• Patients with generalized vitiligo, especially when familial, are more likely to have autoimmune disorders than those with SV
Common associations

More common associations

Addison disease
Alopecia areata
Atopic dermatitis
Autoimmune thyroid disease
Chronic urticaria
Diabetes mellitus
Halo nevi

Hypoacusis
Hypoparathyroidism
Ichthyosis
Ocular abnormalities
Pernicious anemia
Psoriasis
Rheumatoid arthritis
Autoimmune thyroid disease (ATD)

- Median prevalence of ATD in vitiligo patients:
  - children: 6.89% (5.79-12.7%)
  - adult: 18.6% (13.7-22.9%)

- The risk of ATD in vitiligo patients seems to increase with age.

**Less common associations**

<table>
<thead>
<tr>
<th>Acrokeratosis paraneoplastica Bazex</th>
<th>MELAS syndrome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alezzandrini syndrome</td>
<td>Morphea</td>
</tr>
<tr>
<td>APECED syndrome</td>
<td>Multiple endocrine</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ANA is positive in up to **12.4%** of patients

<table>
<thead>
<tr>
<th>B Sara-responsive dystonia</th>
<th>Sarcoidosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dysgammaglobulinemia</td>
<td>Schmidt syndrome</td>
</tr>
<tr>
<td>HIV</td>
<td>Systemic lupus erythematosus</td>
</tr>
<tr>
<td>Inflammatory bowel disease</td>
<td>Turner syndrome</td>
</tr>
<tr>
<td>Kabuki syndrome</td>
<td>Twenty-nail dystrophy</td>
</tr>
<tr>
<td>Kaposi sarcoma</td>
<td>Voqt-Koyanaqi-Harada syndrome</td>
</tr>
<tr>
<td>Melanoma</td>
<td></td>
</tr>
</tbody>
</table>

Recommendations

- TSH
- ANA
- Thyroid antibodies: can present up to 7 years before clinical diagnosis of autoimmune thyroid diseases

Neurohumoral hypothesis

- Melanocytes and nerves arise from neural crest cells
- Lesions may also exhibit increased levels of NE and decrease AchE
- Alteration in neurotransmitters may cause
  - melanocyte cytotoxicity
  - vasoconstriction, cell hypoxia

Differential diagnosis

• Depigmented lesion
  - nevus depigmentosus
  - chemical leukoderma
  - postinflammatory depigmentation
  - lichen sclerosus
  - idiopathic guttate hypomelanosis
  - vitiligo-like DLE
Nevus depigmentosus
Chemical leukoderma: hydroquinone
Postinflammatory depigmentation in severe atopic dermatitis
Lichen sclerosus
Idiopathic guttate hypomelanosis
Nevus anemicus
Differential diagnosis

- Hypopigmented lesion
  - pityriasis alba
  - pityriasis versicolor
  - postinflammatory hypopigmentation
  - hypopigmented mycosis fungoides
  - progressive macular hypomelanosis
  - tuberculoid leprosy
  - Ash-leaf hypomelanotic macule
  (tuberous sclerosis)
Pityriasis alba
Pityriasis versicolor
Postinflammatory hypopigmentation
Tuberculoid leprosy
Ash leaf macule
Management
Topical corticosteroids (TCS)

• Up to 75% repigmentation on face and neck, in dark skin, and recent lesions
Adverse effects of topical steroids

• Atrophy
• Telangiectasia
• Purpura, easy bruising
• Striae
• Acne
• Hypertrichosis
• Glaucoma
• Cataract
• Etc.
TCS: recommendations

• Application of potent TCS is advised to limited, extra-facial lesion for
  -3 months (everyday) or
  -6 months (15 days/month)

• Large area of skin, thin skin, children: momethasone furoate is preferred
Topical immunomodulators (TIM)

- Tacrolimus, pimecrolimus
- Alternative to TCS for lesions on thin skin
- Results similar to TCS with fewer side effects
- Occlusion enhance the effect
- TIM enhance the efficacy of phototherapy
TIM: recommendations

• TIM should be restricted to face and neck region
• Twice daily applications are recommended
• The treatment should be prescribed initially for 6 months. If effective, treatment longer than 12 months may be proposed
• During the period of treatment, moderate but daily sun exposure is recommended
Narrowband UVB and targeted phototherapy

• NUVB
  - mean repigmentation is 41-68% from 3-6 mths
  - a gold standard for the treatment of vitiligo

• Targeted phototherapy
  - for small/ localized lesion
  - 2-3 times/week
NUVB and targeted phototherapy: recommendations

• Total NUVB is indicated for generalized NSV (>15-20% BSA involvement)

• Targeted phototherapy is indicated for
  - small lesion
  - all cases where C/I exist for total NUVB
NUVB and skin cancer

• NUVB does **NOT** significantly increase risk of NMSC compared with the general population

Other systemic treatments

- Current data do not provide enough evidence to recommend systemic corticosteroids, immunosuppressants or biologics in vitiligo

Surgery: recommendations

- Surgery should be preserved for SV, localized vitiligo, after failure of other treatments
- For NSV, stable disease and KP negative are eligible

Vitiligo surgery

• Tissue graft
  - punch graft
  - suction blister graft

• Cellular graft
  - non-cultured epidermal cell suspension
  - melanocyte culture
Treatment algorithm
- avoidance triggering factors
- TCS, TIM

SV

No therapy

repigmentation

progression

Phototherapy

repigmentation

No repigmentation

Camouflage

KP+

Surgery

KP−

NSV
- avoidance triggering factors
- TCS, TIM, NUVB for 3 mths
- Camouflage

NUVB 9 months

Immunosuppressants?

Camouflage
Depigmentation

Surgery

Repigmentation

Progression

KP+

No repigmentation

KP-
Q & A
Melasma

ผศ.นพ.ว่าสุนทร วิจิตรนนท์
หน่วยโรคผิวหนัง ภาควิชาอายุรศาสตร์
คณะแพทยศาสตร์โรงพยาบาลรามาธิบดี
Melasma

- Acquired pigmentary disorder
- Symmetrical hyperpigmented patches and macules, especially the forehead, malar area, and chin
Epidemiology

• The reported prevalence of melasma ranges from 8.8% among latino females to 40% in SE populations
• Onset: 20+-40+ YO
Differential diagnosis

- Postinflammatory hyperpigmentation
- Nevus of Hori
- Becker melanosis
- Drug induced hyperpigmentation: minocycline, phenytoin, clofazimine
- Solar lentigo
- Acanthosis nigricans
- Lichen planus actinicus
Postinflammatory hyperpigmentation 2° to acute cutaneous LE
Nevus of Hori
Drug-induced hyperpigmentation

Minocycline

Clofazimine
Acanthosis nigricans
Solar lentigo
Pathogenesis
Genetic predisposition

- A positive family history of melasma were found in 10%-70% of study subjects
Hormone

• Many patients note the onset or worsening of disease with pregnancy or OCP use: estrogen, progesterone
• Thyroid hormone??
• LH??
• ACTH, MSH??
UV light

• UV radiation stimulate the production of multiple cytokines (e.g., IL-1, ET-1, α-MSH, ACTH, SCF, GRO-α, GM-CSF, PGE$_2$) from keratinocytes which upregulate melanocyte proliferation and melanogenesis
Treatment

• Before melanin synthesis e.g., UV block, cytokine inhibitors, receptor blocking agents, tyrosinase transcription

• During melanin synthesis e.g., enzyme inhibition (e.g., tyrosinase)

• After melanin synthesis e.g., inhibition of melanosome transfer, increase skin turnover
Patient education

• Sun avoidance
• Patients who develop melasma while using hormonal contraception should stop the medication
Sunscreen

• A regular use of broad spectrum sunscreen is effective both in preventing melasma and in enhancing the efficacy of topical therapies for melasma

• A broad spectrum UVA- and UVB-protective sunscreen with an SPF of at least 30 along with a physical block (e.g., titanium dioxide or zinc oxide) should be used and reapplied frequently
Topical treatment: first line

• Hydroquinone: tyrosinase inhibition
• Retinoids: inhibit tyrosinase transcription, ↑cell turnover, ↓melanosome transfer
• Triple combination: hydroquinone, retinoids, steroids
Topical treatment: adjunctive

- Azelaic acid
- Kojic acid
- Arbutin
- Ascorbic acid
- Licorice extract
- Soy
Chemical peels

• Glycolic acid may be the most efficacious peeling agent for melasma, but it should be used cautiously

• Glycolic acid peels should be used in conjunction with a depigmenting agent for maximal benefit and to minimize the risk of postinflammatory hyperpigmentation
Laser and light

• Laser and light therapy (e.g., fractional laser, IPL) may also provide modest benefit as an adjunctive treatment in a select population of patients, but larger studies are needed before this therapy can be widely recommended.