# Summary

Vitiligo is an acquired chronic pigmentation disorder characterized by depigmented patches of the skin usually symmetrically distributed and usually increase in size with time. Its prevalence is estimated to range between 0.5% and 4% in various populations. The disease shows no racial, or socioeconomic predilection. The disease is most disfiguring in darker racial groups. The destruction of MCs is the cause of depigmented maculae that clinically represent the disease vitiligo. Although the pathogensis of vitiligo is complex and not fully understood, various theories have been proposed such as the genetic factors, autoimmunity, neurological factors, toxic metabolites, biochemical hypotheses, lack of melanocyte growth factors and melanocytorrhagy hypothesis. The disease has many morphological variants (trichrome, quadrichrome, pentachrome, blue, inflammatory and confetti macules), it may be localized (focal, segmental and mucosal), generalized (acrofacial, vulgaris and mixed) or universal. The psychological aspect of vitiligo patients is influenced and exacerbated by societal perception of skin disfigurement and irregularities in skin color.

Evidence Based Medicine is "the conscientious, explicit, and judicious use of the best current evidence in making decisions about the care of individual patients. It means integrating individual clinical expertise, the best available external clinical evidence from systematic research with the patient values. The full integration of these components into clinical decisions enhances the opportunity for optimal clinical outcomes and quality of life. Also, EBM seeks to assess the quality of evidence of the risks and benefits of treatments.

Vitiligo had been a difficult disease to treat. With the absence of a standardized scoring system for vitiligo, a meta-analysis to assess different treatment options is difficult.

Photochemotherapy should be considered for treatment of vitiligo only in adults who cannot be adequately managed with more conservative treatments, who have widespread vitiligo, or have localized vitiligo with a significant impact on QoL. KUVA should be used in preference to oral PUVA in cases of hypersensitivity to psoralens or contraindications for their use, in localized forms of vitiligo and in children .

Phototherapy, in the form of NB-UVB (311 nm-313nm) or BB-UVB (290nm-320nm), and by the comparison between the efficacy of NB-UVB radiation therapy with PUVA and its lack of the systemic adverse effects, NB-UVB has emerged as the initial treatment of choice for patients with moderate to severe disease**,** and microphototherapy treatment of choice in patients with <30% BSA involvement and the best treatment for children.

The excimer lasers (XeCl and MEL) appears to be more effective than NB-UVB phototherapy in treatment of NSV, especially in small lessions**,** while He-Ne lasers are the most effective non surgical treatment for SV, but their costs limit their use.

In adults with recent onset of vitiligo, treatment with a potent or very potent topical steroid should be considered for a trial period of no more than 2 months but its use is impractical in generalized vitiligo because of associated adverse effects. While systemic steroids may arrest the progression of vitiligo and lead to repigmentation by immunosuppression but their adverse effects limit their use.

Topical calcineurin inhibitors recently introduced for the treatment of vitiligo. These TCIs offers the advantage of prolonged treatment without the adverse effects seen in the long-term use of corticosteroids, so they are preferred by several doctors specially in young children, mucosa, body folds, genitalia and in the areas of eye lids, and they give the best results in lesions in the head and neck region.

Vitamin D3 analogues inhibits T-cell activation, stimulates growth and differentiation of KCs and MCs, induces melanogenesis by reducing the disturbed calcium influx into MCs, and restores calcium homeostasis. While antioxidant therapy use in the treatment of vitiligo to improve the redox status by the elimination of the cytotoxic metabolite of melanogenesis which originated by oxidative stress, but it is not preferred as monotherapy, while they potentiate the efficacy of phototherapy.

Antioxidants, PLe, 5-FU and ginko biloba are more effective as an adjuvant therapy than monotherapy as they increase the efficacy of the phototherapy.

Depigmentation therapy is reserved for vitiligo patients with > 80% BSA involvement (vitiligo universalis), choose not to seek repigmention and who can accept permanently not tanning. The Q-switched alexandrite, or QSRL after tanning is an effective, fast and safe way of depigmentation of residual pigmented patches in patients with vitiligo universalis, especially after failure of bleaching agents and the scar formation is minimal.

Patients with stable vitiligo, who are refractory to medical therapy are the best candidates for surgical treatment. The different modalities of surgical techniques include tattooing, CE grafting, CM grafting, NECS or PSG. Post operative phototherapy increase the efficacy of transplantation procedures. Transplantation procedures are contraindicated for patients with a history of hypertrophic scars or keloids.

In comparison of non-surgical therapies, a meta-analysis of the literature among patient series studies on generalized vitiligo, the highest mean success rates were achieved with NB-UVB. while in comparison of surgical methods, various meta-analyses of published studies have shown that STSG, SBEG, and PSG have comparable success rates of repigmentation with preference to STSG.

# Conclusions:

- After many years of research, the challenge of generating level-1a evidence studies for the treatment of vitiligo still exists, due to the lack of a standardized scaling systems**.**
- Repigmentation with PUVA is widely variable and rarely is 100% achieved.
- We can conclude that NB-UVB is the most effective and safest therapy for generalized vitiligo, it is more effective than PUVA and BB- UVB therapy and has fewer side-effects.
- The 308 nm excimer laser has been shown to be effective and has high tolerance in the treatment of localized vitiligo, the 308 monochromatic excimer laser use to treat children and larg areas, while the He-Ne laser used to treat segmental vitiligo.

- In adults with recent onset of vitiligo, treatment with a potent or very potent topical steroid should be considered for a trial period of no more than 2 months. Skin atrophy has been a common side-effect. The use of oral dexamethasone to arrest progression of vitiligo can't be recommended due to an unacceptable risk of side effects.
- Topical TCIs should be considered as an alternative to a topical steroid. The side-effect profile of TCIs is better than that of a highly potent topical steroid.
- The use of topical vitamin D3 analogues, antioxidants, PLe, 5-FU and ginko biloba as a monotherapy is not recommended, while they potentiate the efficacy of phototherapy
- Depigmentation with Q-switched alexandrite, QSRL, 88% aqueous phenol or MBEH should be reserved for adults with vitiligo universalis.
- Split-skin grafting is the best surgical procedure because it can be used in difficult sites, gives better cosmetic repigmentation results than PSG and more economic than cellular methods. While PSG is not recommended due to a high incidence of side-effects and poor cosmetic results. Postoperative phototherapy increase the efficacy of all surgical methods.