Autoimmune Reactivity in Vitiligo

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Many of you have taken the time to share your thoughts on vitiligo and research with me by mail or email. It is interesting to see how often you have conveyed that a traumatic experience has triggered the onset of skin discoloration. This is definitely an area that requires more research! We think that in those of us with 'vulnerable' pigment cells, such experiences trigger an immune response directed against our own pigment cells. In fact, in the past we have provided a body of evidence to support that pigment cells can be actively involved in immune responses of the skin. This may well be why these cells are singled out in vitiligo (in comparison to, for instance, keratin-producing epidermal cell} in psoriasis, a skin disorder with striking analogies to vitiligo).

The importance of T cells in the immune attack that finally eliminates pigment cells from the skin is supported by the fact that T cells prepared to attack tumor cells in melanoma can cause vitiligo-like depigmentation through the same process. Such depigmentation is actually a positive sign for melanoma patients, because it means that the immune system is working hard at eliminating the tumor. In fact, it appears that similar T cells are at work in vitiligo. That brings me to an important positive note for people with vitiligo: the active immune response that is causing the loss of skin pigmentation helps to prevent the outgrowth of melanoma tumor cells, providing some protection against this deadly disease. We are working hard on providing more evidence for this line of thought.

The project you are supporting for me aims to define parts of the pigment cell that ar~ recognized by T cells infiltrating the skin in vitiligo. We are introducing characteristics of pigment cells into other cell types that are not normally attacked in vitiligo, in order to see which properties are responsible for recognition by the immune response. Through collaborations with Dr. Gisela Erf in Arkansas, we can test this hypothesis in a laboratory setting.

Additional information relating to our studies can be found in our recent publication: Das PK, van den Wijngaard RMJGJ, Wankowicz-Kalinska A and Le Poole, IC. A symbiotic concept of autoimmunity and tumor immunity: lessons from vitiligo .Trends Immunol 22: 130-136(2001).

Of course, we hope that such publications will put vitiligo into the limelight and stimulate further research into causes and solutions. Continued support by the National Vitiligo Foundation is helping us achieve this goal. If you live in the Chicago-land area and are willing to participate in our studies through the donation of tissue, or would like to share your experiences through email, I can be contacted at ilepool@lumc.edu.

Publications:

I Van den Wijngaard R *et ai,* Local immune response in skin of generalized vitiligo patients. Destruction of melanocytes is associated with the prominent presence of CLA+ T cells at the perilesional site. Lab Invest 80: 1299-1309(2000)

2 Vanden Wijngaard RMJGJ *et ai,* Expressionand modulation of apoptosis regulatory molecules in human melanocytes: significance in vitiligo. Br J Dermatol 143:573-81(2000)

3 LePoole IC *et ai,* PIG3V,an immortalized human vitiligo melanocyte cell line, expresses dilated endoplasmic reticulum. In Vitro Cell Dev Bioi Anim 36: 309-319(2000)