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Reverse Translation

It is one of the most comforting beliefs for those involved in biomedical bench science that clinically relevant discovery flows from bench to clinic via some unidirectional process called 'translation'. Witness the worldwide inflation of the 'translational research' currency. The reality is a lot messier and the paper by Jensen and colleagues (p. 474–479) on skin cancer in organ transplant recipients is yet another reminder that clinical science is a discipline *sui generis*.

A large amount of murine work suggests that the immune system may play an important role in skin cancer – at least in mice. There is also a large body of descriptive work in human experimental systems suggesting that such processes may be at play in man too. What is lacking. however, is any sort of quantitative model of what really happens to patients. Enter the work of Jensen and colleagues.

Taking advantage once again of the strong epidemiological framework in the Scandinavian countries, they have systematically looked at skin cancer rates by organ of transplant, by immunosuppressive regimen and, for comparison, in patients with chronic diseases of the organs most usually transplanted. They confirm previous work but also extend our knowledge.

The authors show that different factors are at play in determining the increases in basal cell carcinoma and squamous cell carcinoma rates for the latter are similar in the different organ transplant groups, whereas for squamous cell carcinoma, rates are highest in the cardiac group. The changes for squamous cell carcinoma they attribute to differences in immunosuppression – particularly by cyclosporine – although an important role for azathioprine via its photosensitising properties remains a key possibility. As in so many things, basal cell carcinoma continues to remain a puzzle. The authors also compare carcinoma rates in patients with chronic diseases without transplantation, finding that only the renal group shows a greatly increased risk. For melanoma, little evidence of an increase in incidence is seen for any post-transplant group, but numbers are small.

Of course, what remains for future workers is to provide clinical insights that might allow us to more easily dissociate immunosuppression from cancer. That is something that could not get lost in translation.

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