CARDIOVASCULAR DISEASE

Revising salt consumption

Lancet **392**, 496–506 (2018).

Credit: Martin Dohrn/Science Photo Library

The current World Health Organization recommendation that sodium consumption should not exceed 2 g per day to prevent cardiovascular disease is challenged by a large epidemiological study.

The Prospective Urban Rural Epidemiology study is ongoing in 21 countries. An international group of researchers from Canada and China analyzed data from 95,767 participants from 18 countries. They used fasting morning urine sodium content as a surrogate for sodium intake and correlated this with major cardiovascular events, mortality and blood pressure.

They found a positive association between sodium intake and blood pressure, but no increase in cardiovascular disease and strokes was seen in communities in which sodium intake was between 3 and 5 g per day. Sodium was associated with stroke only among communities with very high sodium intake (greater than 5 g per day), which was mostly communities from China. This suggests that strategies to reduce sodium intake should be focused only in these communities. *HS*

https://doi.org/10.1038/s41591-018-0193-5

CANCER IMMUNOTHERAPY

Modeling tumors and their T cell killers

Cell **174**, 1–13 (2018)

It is now possible to model the interactions between tumors and reactive autologous T cells using organoids cultured with peripheral blood lymphocytes.

Treating melanoma by expanding a patient's own tumor-reactive T cells ex vivo and returning them to that patient has shown great success; however, this treatment is not yet applicable to all cancers, and not all patients with melanoma respond for reasons that are unknown.

Emile Voest and his colleagues from the Netherlands Cancer Institute cultured colon cancer organoids or non-small-cell lung cancer organoids with autologous blood. They found that this activated tumor-reactive T cells in the culture, and these cells killed the organoids. This culture system could be used both to study the interactions between tumors and T cells and to generate the T cell product that is reinfused back into patients for treatment. *HS*

https://doi.org/10.1038/s41591-018-0189-1

INFECTIOUS DISEASE

An option for treatment of multidrug-resistant HIV

N. Engl. J. Med. **379**, 645–654 (2018).

A humanized antibody therapy is an option for individuals infected with HIV for whom there are limited choices.

Although antiretroviral therapy is able to control HIV in many individuals with the virus, some patients have multidrug-resistant HIV infection.

Ibalizumab is a humanized antibody that blocks the entry of HIV into its target cells by noncompetitive binding. Stanley Lewis and his colleagues enrolled 41 patients with multidrug-resistant HIV and limited treatment options into a 5-week trial using this drug, which has previously been shown to have some efficacy in humans.

They found that 83% of patients had an initial response to the drug, and 43% achieved viral suppression to undetectable levels at 24 weeks. *HS*

https://doi.org/10.1038/s41591-018-0191-7

REGENERATIVE MEDICINE

Restoring sight with native cell reprogramming

Nature **560**, 484–488 (2018).

A population of cells known as Muller glia can be reprogrammed in mice to regenerate rod photoreceptors.

Muller glia are known to be a source of retinal stem cells that can replenish damaged retinal neurons in zebrafish, but in mammals, they do not divide or differentiate without serious injury and then only with limited capacity.

Bo Chen and his colleagues were able to transfer genes in vivo into these cells in mice. The cells were able to differentiate to generate rod photoreceptors and restore vision in a mouse model of congenital blindness. *HS*

https://doi.org/10.1038/s41591-018-0192-6

Hannah Stower

COMMON DISEASE

Bringing polygenic risk scores to the clinic

Nat. Genet. http://www.nature.com/articles/s41588-018-0183-z (2018).

Genetic testing that allows calculation of the risk of developing common diseases based on multiple genetic variants may now be ready to be used in the clinic in a meaningful way.

Scientists have long known that for many common diseases, the chance of development is influenced by multiple genes; however, it has previously not been possible to refine these predictions in enough people such that they are relevant to clinical decision making.

Sekar Kathiresan and his colleagues in the Boston area developed risk scores based on multiple genes for coronary artery disease, atrial fibrillation, type 2 diabetes, inflammatory bowel disease and breast cancer identified through recent genome-wide association studies. They tested and validated the genes in data from the UK Biobank. They found that the predictions were reliable enough to consider using these scores in the clinic.

It will be important to further test these predictions in other populations. *HS*

https://doi.org/10.1038/s41591-018-0190-8