Molecular Medicine

Podcast Transcript
Episode 64: Lupus, Malaria and Acute Lung Injury

Hello Mollie Medcast listeners and welcome back to our podcast. Mollie Medcast is the podcast for the biomedical journal, *Molecular Medicine*. My name is Margot Puerta, I'm the Managing Editor here at *Molecular Medicine* and I'll be your host for this podcast episode. In this week's podcast we're going to review some of the papers from our January-February 2010 issue: our cover story is "Exploring The Autoimmune Response In SLE", then we have a research article "Malaria Susceptibility Is Linked With A Common Marker Of Inflammation", followed up by a review paper: "PRR-Dependent Mechanisms Of Acute Lung Injury".

Let's take a quick moment to review our goal here at *Molecular Medicine*. Our mission is to publish novel work that's concerned with understanding the pathogenesis of disease at the molecular level, which may lead to the design of specific molecular tools for disease diagnosis, treatment and, ultimately, prevention. If you're interested in submitting a manuscript to our journal, please visit our Web site for information, www.molmed.org, that's m-o-l-m-e-d(dot)o-r-g.

Our first paper in this podcast episode, "**Exploring The Autoimmune Response in SLE**", appears on the cover of our January-February issue.
Autoimmune diseases like systemic lupus erythematosus, or SLE, are caused by a breakdown in self-tolerance. This can be seen by the appearance of autoantibodies and autoreactive T lymphocytes. Numerous health complications often result from this breakdown in self-tolerance, and these complications usually affect a person's skin, joints, kidneys, lungs, nervous system and serous membranes. In SLE, diversification and augmentation of the immune response happens with epitope spreading, and we can think of this as the immune response "jumping" from one antigen to another. The authors here demonstrated the ability of autoantigens to induce antibodies to cross-recognize parts of protein particles that correspond to RNA recognition motifs [RRMs] of different nuclear autoantigens via molecular mimicry. The title of the paper by Dr. John Routsias and his colleagues is, "RNA Recognition Motif (RRM) of La/SSB: The Bridge for Interparticle Spreading of Autoimmune Response to U1-RNP". The investigators discovered that the RRM region, so that's the RNA recognition motif region, of the La/SSB autoantigen could trigger interparticle B cell diversification to U1-RNP. This confirms the importance of the RRM region pathway, resulting in autoimmunity in lupus. Understanding these molecular mechanisms involved in the initial events of the autoimmune process could lead to the development of therapeutic strategies that block the cascade of events resulting in the development of SLE.

The second paper summary for this episode is:
Malaria Susceptibility Is Linked With A Common Marker Of Inflammation
Malaria is a major cause of morbidity and mortality in equatorial regions of the globe, and every year there are between 300 and 500 million new cases of malaria worldwide. Inflammation in malaria pathogenesis is induced by non-specific acute phase proteins. One such protein is CRP, or C-reactive protein. The CRP gene is highly polymorphic, and single nucleotide polymorphisms (or SNPs) have been identified at several loci. Of these, the triallelic –286 SNP was strongly associated with plasma CRP concentration. In this paper, Dr. Hayder Giha and colleagues examined the CRP –286 SNP in a population of Sudanese donors. They found the CRP –286 A-allele was associated with an increase in malaria susceptibility. The title of this paper is, "Association of a Single Nucleo-

tide Polymorphism in the C-Reactive Protein Gene (–286) with Susceptibility to Plasmodium falciparum Malaria." This study identifies a genetic marker for malaria susceptibility and also helps shed some light on role of inflammation in malaria infection.

The last paper in this podcast lineup is a review article:

PRR-Dependent Mechanisms Of Acute Lung Injury

Acute respiratory distress syndrome [ARDS] is a central cause of morbidity and mortality in intensive care units. It is caused by an uncontrolled systemic inflammatory response to things like sepsis, major surgery and trauma. Innate immunity can be triggered through pattern recognition receptors or PRRs, which recognize conserved microbial motifs or pathogen-associated molecular patterns and endogenous danger signals. The activation of PRRs initiates extracellular, as well as intracellular, signaling cascades that ultimately promote inflammatory responses. Drs. Xiang and Fan of the VA Pittsburgh Healthcare System focus on recent advances on the role of pattern recognition receptors in the mechanisms of Acute respiratory distress syndrome. The title of their paper is, "Pattern Recognition Receptor–Dependent Mechanisms of Acute Lung Injury." A greater understanding of these complex pathways is necessary to explore new treatment options for acute respiratory distress syndrome patients.

That's it for this week's episode of The Mollie Medcast. Join us next time when we fingerprint the players in primary glioblastoma, take a look at the de novo approach for endocrine-resistant breast cancer and review RNA surveillance. For questions or comments regarding this podcast, please feel free to send me an e-mail at: margot@molmed.org, that's m-a-r-g-o-t (at)
m-o-l-m-e-d.o-r-g. You can also follow us on Twitter (@mol_med).

This podcast is available on molmed.org and is up in iTunes, to find us, type "Mollie Medcast" in the search bar. *Molecular Medicine* is published bimonthly by the Feinstein Institute for Medical Research.

From New York, this is margot@molmed.org, thanks for listening!

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