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Hello *Mollie Medcast* listeners and welcome back! *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 your host for this podcast episode. So, we've reached the halfway mark for 2010 and instead of reviewing our recently published papers I thought it would be fun to take a look back at the top three downloaded papers so far this year.

Before we get to those three papers, we'll start by taking a minute to review our goal here is at *Molecular Medicine*. Since 1994, our mission has been 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 prevention. If you're interested in submitting a manuscript to the journal, please visit our Web site for information, www.molmed.org. Alright, let's get started with our top three downloaded papers from January to June 2010.

The third most downloaded paper so far this year is:

Measuring MMPs & Antioxidants In Juvenile-Induced Arthritis—Noninvasively (this paper is from our March-April 2010 issue)

Juvenile Idiopathic Arthritis (or JIA), is the most common rheumatic disease in children. It occurs in about 1 in 1,000 children, which is about 300,000 children in the U.S. If untreated, JIA interferes with normal growth and development. Disease severity varies between active and nonactive states, and treatment for JIA has drawbacks in terms of costs and side effects, as well as decrease in efficacy over time. The follow-up requires multiple blood tests, which can be a major drawback in children. Effective, noninvasive measures of disease status, such as salivary testing, could help optimize drug dosing regimens. Dr. Riva Brik and colleagues from the Israel Institute of Technology analyzed salivary antioxidant and compositional profiles in JIA patients. In their paper, titled "Salivary Antioxidants and Metalloproteinases in Juvenile Idiopathic Arthritis," they demonstrated that antioxidant status was significantly higher in the saliva of JIA patients. Additionally, the level of matrix metalloproteinases (or MMPs), which are endopeptidases capable of contributing to tissue destruction, was significantly lower in JIA patients undergoing antiTNF treatment as compared with patients not receiving treatment. Thus, antiTNF treatment may modify the degradation process by inhibition of MMP activity. The noninvasive benefit of this test is that it can even be done from home and mailed into the physician's office, thereby avoiding painful repetitive blood testing.

The second most downloaded paper so far this year is:

Proteolytic Dysfunction In Cystic Fibrosis (and this paper comes from our May-June 2010 issue)

Cystic fibrosis, or CF, is a lethal genetic disorder characterized by airway remodeling and inflammation, leading to premature death. Recent evidence suggests the importance of protease activity in CF pathogenesis. One protease, matrix metalloproteinase 9 (or MMP-9 for short) demonstrates increased activity in CF patients undergoing acute pulmonary exacerbation. This may be due to increased MMP-9 activation as well as degradation of MMP-9's natural inhibitor, tissue inhibitor of metalloproteinase-1 (or TIMP[-1]). To examine if this relationship exists in nonexacerbating CF patients, Dr. Patricia Jackson and her colleagues examined protease activity

in nonexacerbating CF patients and controls. The title of their paper is, “Human Neutrophil Elastase-Mediated Cleavage Sites of MMP-9 and TIMP-1: Implications to Cystic Fibrosis Proteolytic Dysfunction.” Results demonstrate increased MMP-9 activity is stable in CF lung disease, and the presence of specific protease products in CF sputum highlights that human neutrophil elastase-mediated activity plays a role in this dysregulation. This data may have implications for disease-specific therapeutics.

And, the top downloaded paper so far this year is:

Carcinogenesis And Cancer Therapy (this is a review from our March-April 2010 issue)

Cancer kills over six million people worldwide annually. Mortality rates have begun to decrease, due in part to prevention and early disease detection. Unfortunately, many cancers are not detected until tumor cells have metastasized, and the mortality rate in patients with metastatic disease is still quite high. A lot of the cancer research out there has been focused on identifying genetic alterations of the cancer genome in an effort to try to personalize cancer therapy and therefore make it more effective. In this review paper titled, “A New View of Carcinogenesis and an Alternative Approach to Cancer Therapy,” Dr. Miguel Lopez-Lazaro of Spain’s University of Seville discusses an alternative approach, based on the alteration of oxygen metabolism in cancer cells, as a possible, more reliable method of therapy.

And that’s it for this week’s episode of the *Mollie Medcast*. Join us next time when we take a look at: hedgehog signaling in meningiomas, microRNAs in acute kidney injury, and insulin signaling in type 2 diabetes. 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.org. You can also keep up with the journal by following us on Facebook and Twitter (@mol_med).

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

Produced by Margot Puerta

Managing Editor, *Molecular Medicine*

Written by Robert L Pinsonneault and Veronica J Davis

Associate Editor and Communications Editor, *Molecular Medicine*

Edited by Veronica J Davis

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