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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 your host for this podcast episode. In this week's podcast we're going to go discuss trauma and wound healing by reviewing a few research articles from our July/August 2009 issue. The three papers we'll check out are: "After The Crash: The Role Of Splenectomy In Managing Blunt Trauma", next, we'll look at "Better Post-trauma Prognosis Through Gene Profiling", and last but not least, "Wound Healing: Specific Tissue Protective Compounds Skirt The Negative Side Effects Of EPO".

Our mission here at *Molecular Medicine* is to publish novel work that's concerned with understanding the pathogenesis of disease at the molecular level. We do this so that we can ultimately design molecular tools for disease diagnosis, treatment, and prevention. New impact factors were released this past week and I'm happy to announce that our impact factor has increased to 3.411 this puts us in the top 15% of publications. If you have a manuscript you think might be suitable for us but you're not quite sure about it, send me an abstract of your work in an email. My email address is [margot@molmed.org](mailto:margot@molmed.org) and I'll give you some feedback on your work.

Alright, so let's take a look at our first traumatic paper:

**After The Crash: Role Of Splenectomy In Managing Blunt Trauma**

Millions of nonfatal injuries resulting from blunt trauma occur in the United States each year. Forty percent of traumas include intraabdominal injuries with the liver and spleen sustaining the bulk of the damage.<sup>1</sup> When the spleen is injured, uncontrolled bleeding may require operative interventions, including splenectomy. In patients that are hemodynamically stable however, it is not clear whether splenectomy will lead to improved outcome. Dr. Marie Crandall and colleagues at both the University of California San Francisco and Northwestern University Feinburg School of Medicine investigated this idea using metrics from the 2002 National Trauma Data Bank. They performed a retrospective study on over 46,000 patients who sustained blunt liver or spleen injury. Patients undergoing splenectomy experienced shorter hospital and ICU lengths of stay than patients managed nonoperatively or with splenorrhaphy, which is surgical repair of the spleen. Dr. Crandall postulates that this improvement could be due to beneficial modulation of acute inflammatory responses coordinated through the spleen. These results have implications for how emergency departments approach surgical options for blunt trauma patients.

Next up is:

## **Better Post-trauma Prognosis Through Gene Profiling**

Traumatic injury very often leads to infections and other complications such as sepsis and multiple organ dysfunction syndrome. This leads to longer lengths of stay, more intensive care, and drives up the cost of treating trauma cases. In fact, trauma is now the number one health care cost in the US. Scoring systems are used to assess patient treatment options and determine prognosis in trauma cases. The Acute Physiology and Chronic Health Evaluation or APACHE scoring system and Injury Severity Score (or ISS) are commonly used. Dr. Shaw Warren and colleagues took advantage of widely available genomic screening methodologies to assess global cRNA expression from peripheral blood leukocytes drawn from trauma patients. They developed a scoring method that assigns a single value based on these genome-wide expression patterns. The difference from reference score, or DFR, was then correlated with patient outcome. A possible future breakthrough for personalized medicine, the authors found that DFR scoring was useful for predicting outcomes in trauma patients in a manner that both recapitulated and exceeded existing methodologies. High throughput approaches such as DFR scoring could improve the quality and efficacy of trauma patient care.

Lastly we'll look at:

## **Wound Healing: Specific Tissue Protective Compounds Skirt the Negative Side Effects of EPO**

Erythropoietin, or EPO, is integral to red blood cell production. Recent efforts have demonstrated that this molecule is important in the regulation of inflammation and in wound healing. To accommodate these dual roles of EPO, the body possesses specific receptors that drive either erythrocyte production or healing. In this work, Dr. Erbayraktar and colleagues in Turkey and the United States test compounds that may specifically trigger the effects of healing-specific EPO receptors without engaging systemic erythropoiesis. They found that the nonerythropoietic tissue protective compounds Carbamyl-EPO and ARA 290 were able to significantly increase wound healing in several models of injury. Clinical application of their efforts may lessen patient suffering through faster healing times for a variety of wounds and injuries.

That's it for this week's episode of *Mollie Medcast*. Stop by again next time when we smoke out some genes in oxidative stress and investigate the heavy metal consequences affecting sperm and motility. For questions or comments regarding this podcast, please feel free to send me an e-mail at: [margot@molmed.org](mailto:margot@molmed.org), that's m-a-r-g-o-t @ m-o-l-m-e-d.o-r-g. You can also follow *Mollie Medcast* on Twitter by searching for the user name "MollieMedcast" – all one word or find us on Facebook, search for "Mollie Medcast".

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From New York, this is [margot@molmed.org](mailto:margot@molmed.org), thanks for listening!

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