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Hello, *Mollie Medcast* listeners, and welcome back to the 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'll take a look at some more papers from our November-December 2010 issue, they are: "Knocking Down Preterm Birth"; "Inhibiting Caveolin-1: A Sight For Sore Eyes"; that's our cover story; and the review, "ER Stress And Age-related Macular Degeneration".

We'll start by taking a minute to review our goal here 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 website for information, www.mol-med.org. Ok, let's move onto the podcast.

Alright, so we'll start with the first paper for this episode, which is a primary research paper called:

Knocking Down Preterm Birth

Premature birth is an increasing health problem and is the major cause of neonatal mortality in developed countries. Intrauterine infection is often associated with preterm labor. The matrix metalloproteinases are a family of zinc-dependant endopeptidases that aid in the degradation of the extracellular matrix. They allow for cell movement and tissue reorganization, which supports the growing fetus. Endothelin-1 or ET-1, is an extremely potent vasoconstrictor peptide which has been shown to increase myometrial smooth muscle tone. Blockade of Endothelin-1 through the endothelin-converting enzyme 1 ECE-1, inhibitor, or through endothelin receptor antagonists prevents preterm labor and delivery in experimental models. Dr. Wei Wang and colleagues from St. John's University and Newark Beth Israel Medical Center demonstrate that LPS-induced preterm labor is associated with increased levels of matrix metalloproteinase 1. The title of their paper is, "Prevention of Inflammation-Associated Preterm Birth by Knockdown of the Endothelin-1-Matrix Metalloproteinase-1 Pathway." Using ECE-1 RNAi, the authors show that silencing the ECE-1/ET[-1] pathway prevents both the onset of preterm labor and MMP-1 upregulation. Their data indicate that ET-1 and MMP-1 act in the same molecular pathway in preterm labor.

Next up we have another research paper:

Inhibiting Caveolin-1: A Sight For Sore Eyes

Postoperative care for the elderly requires special attention with respect to wound healing time. While several factors have been found to play roles during wound healing, the molecular mechanisms responsible for age-dependent delay in wound healing have not been well defined. Caveolin is a principal structural component of caveolae membranes. Levels of caveolin-1 have been found to increase with aging, and reduction of caveolin-1 using antisense oligonucleotides or siRNA recovers the epidermal growth factor response in senescent cells. Dr. Rhim and colleagues in both Korea and South Korea hypothesized that caveolin-1-dependent responses in aged corneal epithelial cells may be responsible for delayed wound healing. The authors evaluated corneal wound healing time after laser epithelial keratomileusis or LASEK, surgery in young, middle aged and elderly patients.

The title of their paper is, “Caveolin-1 as a Novel Indicator of Wound-Healing Capacity in Aged Human Corneal Epithelium.” Results indicate caveolin-1 status may be responsible for delayed wound healing in the elderly and act as a regulator for wound healing capacity. While downregulation of caveolin-1 may facilitate wound healing in the elderly post LASEK surgery, these results may also be applied to wound healing in other surgeries or traumas.

And, our last summary in this episode is about a review article covering:

ER Stress and Age-related Macular Degeneration

Age-related macular degeneration (or AMD) can cause a progressive loss of central vision in elderly individuals. AMD may be classified into two categories: the atrophic dry form and the exudative wet form. The crucial difference between dry and wet AMD is the development of choroidal neovascularization in the wet form. In this review, Dr. Salminen and colleagues from Finland discuss the role of endoplasmic reticulum stress in neovascularization regulation and the conversion of dry age-related macular degeneration to its detrimental wet counterpart.

And that’s it for this week’s episode of the *Mollie Medcast*. Join us next time when we take a look at: sepsis, liver injury and a review on insulin signaling and resistance. 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 at facebook.com/molmed and Twitter (@m-o-l[underscore]m-e-d).

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

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