

# Good Samaritan Hospital's Cancer Program Recognized by American College of Surgeons Commission on Cancer

Source from Good Samaritan Hospital News Site

Good Samaritan Hospital (GSH) has received the 2005 Outstanding Achievement Award by the American College of Surgeons Commission on Cancer for the high caliber of its cancer program. GSH is one of only 39 hospitals throughout the country and the only healthcare institution in Dayton to earn this prestigious award.

"As you can imagine, we're pleased our hospital has received this great honor," said Jim Pancoast, chief executive officer, Good Samaritan Hospital. "We've known for a long time our cancer program is Dayton's best-kept secret. We're proud of the truly innovative cancer programs and the people who make the program come to life for those individuals who struggle in their fight to become cancer free."

Established in 2004, the Commission on Cancer Outstanding Achievement Award is designed to recognize cancer programs that strive for excellence in providing quality care to cancer patients. A healthcare organization receives the award only after a successful on-site evaluation by a physician surveyor who evaluates the facility based on 37 standards including cancer committee leadership, cancer data management, clinical services, research, community outreach, and quality improvement.

The 39 cancer programs that received the award this year represent approximately nine percent of the programs surveyed during this period. A majority of recipients are community-based facilities, however some teaching hospitals, comprehensive cancer centers

and network cancer programs also received the award.

"We're grateful to earn this honor and the recognition that goes with it; our high standards for quality patient care have been rewarded," said Daniel McKellar, MD, FACS, GSH's medical director of oncology and Ohio Chapter, ACS member. "We



have a strong oncology program and an excellent multidisciplinary team of physicians and staff whose goal is to assure that all cancer patients receive true quality of care that leads to positive clinical outcomes."

GSH's Samaritan Cancer Center is the cornerstone of the oncology program at GSH where the oncology multidisciplinary team works together to find the most effective treatment regimen for every

patient. Its services and treatments include radiation oncology, surgical oncology, gynecological oncology, neurological oncology, chemotherapy, clinical trials, breast and lung cancer coordinators, as well as genetic counseling and testing, among others. GSH has 560 beds available for serving the community since 1932. It is a full-service teaching facility providing a comprehensive range of inpatient and outpatient services. The hospital joins Miami Valley Hospital and Middletown Regional Hospital as part of the Premier Health Partners network.

Established in 1922 by the American College of Surgeons, the Commission on Cancer is a consortium of professional organizations dedicated to improving survival and quality of life for cancer patients through standard setting, prevention, research, education, and the monitoring of comprehensive care. Its membership includes fellows of the American College of Surgeons and representatives of 40 national organizations that reflect the full spectrum of cancer care.

## Resident Essay Contest Abstracts

# The APC Tumor Suppressor Regulation of Human Breast Cancer Cell Homeostasis

By B.J. Boulton • M.B. Ebetino • T.A. Wilson, K.H. Goss, Department of Surgery, University of Cincinnati College of Medicine, Cincinnati, OH

### Introduction

Alteration of the APC tumor suppressor gene is the most common genetic alteration in sporadic colorectal cancer and is observed in as many as 45 percent of sporadic human breast cancers. Studies performed in colorectal cancer cells suggest that APC is a multifunctional protein that likely acts as a tumor suppressor by inhibiting cell proliferation and inducing apoptosis. Furthermore, aberrant activation of the  $\beta$ -catenin/Wnt signaling pathway, as a direct result of APC inactivation, has been associated with both of these processes. However, the role of APC in mammary cell regulation and breast cancer tumorigenesis remains unknown.

We hypothesize that APC regulates normal mammary epithelial cell homeostasis, perhaps by its ability to negatively regulate the  $\beta$ -catenin/Wnt pathway, and loss of this regulation by APC is important in breast tumor formation.

### Methods

In this study, we over expressed human APC tagged with green fluorescent protein (GFP) in a non-transformed mouse mammary epithelial cell line, EpH4, as well

as a human breast cancer cell line, MDA-MB-231. After transfection with APC-GFP or GFP alone and a 36-hour incubation, the percentage of cells undergoing apoptosis was analyzed using immunofluorescent detection of a caspase cleaved epitope of cytokeratin 18 that is uniquely found during early apoptosis. Cell proliferation assays were performed by immunofluorescent labeling of bromo-deoxyuridine (BrdU) 24 hours after introduction into cells transfected with APC-GFP or GFP alone. We next examined a key component of the Wnt signaling pathway,  $\beta$ -catenin, by immunofluorescence and western blotting in cells that over expressed APC or GFP alone.

### Results

APC over expression resulted in a statistically significant ( $p < 0.01$ ) increase in apoptosis in both the normal (64 percent vs. 14 percent) and transformed (80 percent vs. 14 percent) mammary cell lines when compared to cells transfected with GFP alone. There was a statistically significant ( $p < 0.01$ ) reduction in BrdU incorporation in APC-expressing breast cancer cells; 36 percent of MDA-MB-231 cells over

expressing APC demonstrated BrdU uptake as compared to 63 percent of cells transfected with only GFP. No difference in cell proliferation, however, was observed with APC introduction into non-transformed mammary cells when compared to GFP (62 percent vs. 64 percent). In analyzing the activation of the  $\beta$ -catenin/Wnt pathway, EpH4 cells over expressing APC demonstrated dramatically reduced expression of  $\beta$ -catenin, while the reduction of  $\beta$ -catenin in APC-GFP transfected breast cancer cells was less obvious.

### Conclusions

Taken together, our results demonstrate that APC plays a vital role in the regulation of apoptosis in both normal and transformed mammary epithelial cells and that APC expression is sufficient to inhibit cell cycle progression in breast cancer cells, although the mechanism by which APC exerts these effects may be independent of  $\beta$ -catenin/Wnt pathway regulation. These data suggest that the APC tumor suppressor may play distinct molecular roles in breast and colorectal cancer tumorigenesis, a finding that could have important clinical and therapeutic applications.

## Resident Essay Contest Abstracts *Continued*

# Cholangiocyte Injury Mediates Temporal Dependence of Experimental Biliary Atresia

By Mubeen Jafri, MD, B. Donnelly, S. Allen • Gregory Tiao, MD, FACS

Extra-hepatic biliary atresia (EHBA) is a unique disease of the newborn which results in obliteration of the biliary tree. Infection in the newborn period with viruses such as rotavirus, reovirus, and CMV may be a potential cause of EHBA. A murine model of biliary atresia has been established in which infection of newborn mice with rhesus rotavirus (RRV) leads to an obstructive cholangiopathy with histological changes that mirror human disease. The purpose of the present study was to establish the temporal dependence of viral infection and resulting disease as well as address causality for such a relationship. This has not previously been elucidated.

### Methods

Balb/C mice were infected with RRV ( $1.25 \times 10^6$  ffu/gram) via intraperitoneal injection on day of life (DOL) zero, three, five, and seven. Clinical findings including jaundice, acholic stools, appearance of fur, bilirubinuria and weight were monitored for 21 days or until death. Subsets of mice were sacrificed one, three, five, seven, and 14 days post infection. Their extrahepatic biliary trees and livers were harvested for measurement of live virus by focus forming assay, as well as viral antigen and proinflammatory chemokines including macrophage inflammatory protein 2 (MIP-2) and monocyte chemoattractant protein 1 (MCP-1) by sandwich ELISA. Histological evaluation was conducted using paraffin embedding with

hematoxylin/eosin (H&E) staining as well as frozen sectioning with immunochemical staining for viral localization to biliary epithelium.

### Results

Infection of DOL 0 resulted in 100% of pups developing symptoms of disease with a survival of 20%. Infection on DOL 3 resulted in 95% symptomatic pups and survival of 5%. DOL 5 infections resulted in symptoms in up to 50% of pups, only with 9% symptomatic at 21 days, and 100% survival. DOL 7 infections resulted in symptoms in up to 55% of pups, with none symptomatic at 21 days, and 100% survival. Both live virus and viral antigen were present in statistically similar amounts early in the course of infection, but persisted in pups infected on DOL 0 and 3 (early infection group) at later time points with absence of such findings in pups infected on DOL 5 and 7 (late infection group). Marked cholangiocyte injury was demonstrated in the early infection group by H&E staining versus preserved structure in the late infection group despite equivalent viral titers. Immunohistochemistry demonstrated viral tropism to biliary epithelium with no difference between early or late infection. Chemokine expression was more pronounced in the early infection group.

### Conclusion

The induction of the murine model of biliary atresia is dependent

on time of RRV infection. Clinical manifestations are most commonly seen in pups infected during the first three days of life who experience a mortality of greater than 80%. Some clinical symptoms were seen in pups infected after the third day of life, though these resolved and all pups survived. The ability to process live virus (decrease in the detectable levels) and subsequently clear viral antigen correlated with survival in the late infection group. The findings of severe cholangiocyte injury and more pronounced proinflammatory chemokine expression in the early infection group despite similar viral tropism are significant. The degree of injury sustained by the more immature biliary epithelium may contribute to the more profound inflammatory reaction or be a consequence of it. These findings clearly establish a temporal dependence of RRV infection and mouse cholangiopathy as well as provide insight into causality for this relationship. Further, they may help explain why biliary atresia is limited to the newborn period in humans and provide targets for therapeutic interventions in the future.

*Mubeen Jafri, MD, of Cincinnati Children's Hospital Medical Center, received first place in the Basic Science Category of the Resident Essay Contest during the Ohio Chapter Annual Meeting.*

# Cancer Committee Report

By Valeriy Moysaenko, MD, FACS, Chair

My taskforce, The Treatment and Care Taskforce of the Ohio Partners for Cancer Control, was to identify disparities in cancer treatment and care. Disparities are not only issues of race but include gender, culture, age, geography, socioeconomic status, insurance coverage, religion, education, etc. The task force had chosen to evaluate the crosscutting issue of poverty and its impact on colorectal cancer diagnosis, treatment and care. Interestingly, if the Ohio's geographic poverty distribution by county map is superimposed on a geographic "late stage colorectal cancer diagnosis" distribution by county map, there does not appear to be a concordance. This prompted a look at the top 11 counties in Ohio ranked by the highest percentage of poverty. This poverty data was obtained from the Ohio Association of Community Action Agencies' publication, "The State of Poverty in Ohio 2004." This poverty data corresponded well with "Poverty Fact Sheet Series-Defining Poverty," published by The Ohio State University Extension Limited Resource Committee. The late stage colorectal cancer diagnosis data is from "Ohio Cancer Facts and Figures 2005;" the late stage of colorectal cancer being defined as SEER regional and distant stages combined. "Ohio Cancer Facts and Figures 2005" shows that between 1998-2002, Ohio averaged about 7,200 colorectal cancer cases annually. 12.4 percent of the cases were unstaged, and 51 percent of the cases were diagnosed at a late stage.

The 11 counties ranked by poverty level are presented in Table 1 with the percentage of the population living at or below poverty level, percentage late stage cancer diagnosis, and number of late stage cases/total colon cancer cases annualized and percentage staged.

If the average percentage of late stage diagnosis is 51 percent for

**Table 1**

County	Poverty Rate	Late Stage Diagnosis	#Late Stage/#Total	Unstaged
Athens	27%	39%	14/36	16%
Vinton	20%	48%	3/6	13%
Meigs	20%	57%	10/17	10%
Scioto	19%	50%	36/73	12%
Lawrence	19%	46%	26/55	9%
Pike	19%	55%	10/19	17%
Morgan	18%	48%	5/11	1.8%
Gallia	18%	51%	10/20	12%
Adam	17%	53%	13/24	16%
Jackson	16%	52%	12/23	14%
Guernsey	16%	60%	11/34	9%

Ohio, it appears that poverty has no impact on the access to screening and medical care, since eight out of 11 counties had a rate of late stage colorectal cancer diagnoses that could be considered "average" for the state. The three counties with

**Table 2**

Income	# Total Cases	Late Stage Diagnosis
<\$28,000	1485	40%
\$28,000 - \$32,999	1679	44%
\$33,000 - \$38,999	3503	39%
\$39,000 - \$48,999	4975	39%
\$49,000+	4307	41%

definitely higher rates of late stage diagnosis are Meigs with 57 percent, Pike with 55 percent, and Guernsey with 60 percent. The small number of cases calls into question the statistical validity of the data.

This finding is contrary to the general consensus about the impact of poverty on access to medical care. This data implies that the medical system is accessible and provides care

to all regardless of economic status.

The task force felt a different tack was necessary to evaluate and confirm this finding. The National Cancer Data Base (NCDB) was accessed to examine Ohio data. The data would be a collation of income level and late stage colorectal cancer diagnosis as seen in Table 2.

The NCDB data covered the time period 2000 to 2003. The overall late stage diagnosis was considered AJCC Stage III and IV combined. Please keep in mind that AJCC Stages III and IV approximate but do not identically coincide with SEER Stages "regional" and "distant." The overall average for late stage diagnosis was 40 percent.

Again it appears that poverty does not impact access to care and that the medical system is providing equitable access and equitable care to all patients regardless of income level.

Or is the data simply telling us that colorectal cancer screening is not being done for anyone, regardless of socioeconomic status?

Please consider: Colorectal cancer has a sanctioned screening program for average risk patients starting at age 50. Perhaps a 40 percent late stage diagnosis rate is unacceptable, and a universally accessible institution of community colorectal screening is in order.

## Pulse Needs You!

Have you conducted research or a clinical study, or completed a surgical procedure that has presented challenges and outcomes that could be shared to benefit others in the profession? Do you want to be recognized in the publication that the entire Ohio Chapter membership receives quarterly? Then you should submit an article for an upcoming edition of *Pulse!* We know Ohio Chapter members would love to hear about your experiences.

Contact the Executive Office at (877) 677-3227 or [ocacs\\_mngeditor@obiofacs.org](mailto:ocacs_mngeditor@obiofacs.org) with questions.

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## Advocacy

### A Political and Legislative Update from the Ohio Statehouse

By Dan Jones, Legislative Agent

In the middle of a quiet summer recess from legislative activity, the focus on the Capitol Square in Columbus in recent weeks is on politics. Who will be sitting at the Governor's desk in January? Will United States Senator Mike DeWine (R) survive a solid challenge from United States Congressman Sherrod Brown (D)?

While most recent polls show United States Congressman Ted Strickland (D) with a sizable lead over Ohio Secretary of State Ken Blackwell (R), the election will certainly be competitive. In a *Columbus Dispatch* poll released on Sunday, July 23, Strickland led Blackwell by 20 points. In the latest Zogby poll released on Monday, July 24, his lead was less than 5 points.

The *Columbus Dispatch* poll also shows Congressman Brown with an 8-point edge over Senator DeWine. In the Zogby poll, Brown led DeWine 45 percent to 36 percent.

Legislative and other state office races will also be contentious this year as republicans dodge controversy and scandal. Whether or not Ohio democrats will be successful in upsetting the political edge of the republicans is a question that won't be answered until November 7.

#### Legislative Update

With a focus on elections and campaigning, the legislative work at the Statehouse has been put on hold during the summer months. The following bills have been of interest to the Ohio Chapter, ACS in recent

months and will continue to be discussed when legislators return for committee work and session in the fall.

#### SB 88 – Arbitration of Medical Claims

This bill, sponsored by Senator Kevin Coughlin (R- Cuyahoga Falls), requires the Superintendent of Insurance to establish a pilot program to determine the benefits of using arbitration in medical negligence disputes. The bill was voted out of the Insurance, Commerce and Labor Committee and the full Senate in May 2006.

The bill has not yet been referred to a committee in the House, but will likely be considered when the legislature resumes after the fall elections.

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