

14<sup>th</sup> International Conference on

# Surgical Pathology & Cancer Diagnosis

May 17-18, 2018 | Rome, Italy



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### Androgen receptors in breast carcinoma, what pathologists and breast cancer clinicians should know

Invasive breast carcinoma is the most common infiltrating visceral malignancy in women in the USA. More than 200,000 cases were reported in 2015. The role of the androgen receptors (ARs) in mammary carcinogenesis is a current topic of scientific investigation. AR expression is present in normal mammary epithelium and in many invasive breast cancers and cell lines. ARs belong to a family of intracellular steroid hormone receptors and function as ligand dependent transcription factors that regulate target gene expression. The *AR* gene is located on the X chromosome at q11 with no corresponding allele on the Y chromosome, and the gene functions as a single copy. Recent studies have queried the value of ARs as predictors of therapeutic response and have sought to address roles for ARs as therapeutic targets for antiandrogenic targeted endocrine therapies. The majority of studies regarding AR expression in breast cancers have focused on triple negative breast carcinomas. Because of the high reported proportion of AR positivity (36%) in triple negative invasive carcinomas, some authors have proposed that routine assessment of ARs should be pursued. In addition, a number of published data sets from phase II trials have suggested proof of principle for efficacy and minimal toxicity of anti-androgens in treating patients with locally advanced and/or metastatic AR positive breast carcinoma. In this oral presentation, I review and summarize salient literature regarding assessment of ARs in invasive breast carcinoma and also discuss novel concepts for the study of ARs in mammary ductal carcinoma *in situ*.

### Biography

Charles D Sturgis has completed his MD at the University of Kansas in 1992. He then finished Residency in Anatomic and Clinical Pathology at Northwestern University in 1997. He completed a fellowship in Cytopathology at the University of Texas MD Anderson Cancer Center in 1998. He is currently working as an Associate Professor of Pathology and Associate Residency Program Director for Anatomic Pathology at the Cleveland Clinic Lerner College of Medicine in Cleveland, Ohio, USA. He is the author of more than 60 peer-reviewed medical and scientific manuscript publications, several book chapters and more than 70 peer-reviewed published abstracts.

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