The Efficacy of Genetic Biomarkers in Evaluating Precancerous Cervical Lesions

Presenter: Michele Bresler – MS III
Stage of Idea

- Early development and implementation stage
- Team of 7 medical students from Nova Southeastern University
- Dr. Renee Alexis M.D., M.B.A, M.P.H, FACOG
Cervical Cancer

Most common cancer in women under 35 in the UK

13,240 CASES of invasive cervical cancer will be diagnosed

4,170 DEATHS from cervical cancer predicted

Cervical cancer - once one of the most common cancers affecting U.S. women - now ranks 14th in frequency and 3rd most common worldwide.

Cervical cancer is most frequently diagnosed among women aged 35-44.
Current Standard of Care

- Papanicolaou (Pap) smear screening
- Human Papilloma Virus (HPV) infection screening

- Abnormal pap smears undergo a colposcopy procedure and have two options:
  1. “watch and wait” → see if the dysplasia resolves itself → anxiety and uncertainty.
  2. More invasive procedure → removes the abnormal cells → potentially unnecessary, expensive, medical risks

- Lack evidence based genetic testing
HPV associated genetic changes

HPV Infection →

abnormalities on chromosomes 3q and 5p (irreversible DNA damage) →

progression to cervical cancer

Harding University

Steven M. Carr, Genetix
Methods

- **Sample:** cervical cells from women with abnormal pap smears and high risk HPV
- **Testing:** Cervical DNA Dtex Test
- **Analysis:** correlation between biomarkers 3p and 5q and histological biopsies of precancerous and cancerous changes.
Global Impact

- Save Women’s Lives
- Decrease financial burden of treatment
Management and Financing

- NSU President’s Faculty Research and Development Grant of $15,000
- NSU Women’s Health and Family Practice Clinics
- Palm Beach Pathology
What is next…

- Funding to expand our community outreach
- Expanding our patient population and clinic sites
  - Other University partnerships
  - International partnerships
- Feedback and comments on our methodology

Thank You!
Contributions

- Nova Southeastern University-Kiran C. Patel College of Osteopathic Medicine
- NSU Women’s Health Clinic
- NSU Family Practice Clinic
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- Dr. Kenneth Johnson, Jr., D.O.
- Dr. Patrick Hardigan, Ph.D., M.B.A.
- Dr. Emery M. Salom, M.D.
- Palm Beach Pathology

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  - Alixandria Fiorie - MS III
  - Christina Baxter - MS III
  - Dominique Weathers - MS III


References