Objective: The aim of this exploratory pilot study was to determine the correlation between postmenopausal vulvovaginal irritative symptoms (itching, burning, or pain) with vaginal cytokine levels. Method: Postmenopausal women (n=34) not using hormone therapy and presenting with or without symptoms of vulvovaginal irritation were asked to volunteer for this study, which was approved by the local Ethics Committee. Each participant after signing an informed consent underwent a vaginal examination with emphasis on the presence or absence of infectious vaginitis using pH, and wet preparations. A vaginal lavage with 5.0 mL of sterile saline was carried out and a peripheral blood sample was obtained. The vaginal lavage and serum samples were assayed for interleukin (IL)-1β, IL-4, IL-5, IL-6, IL-8, IL-10, IL-12, IL-13, TNF-α, GM-CSF, MIP-1-alpha and RANTES by specific ELISAs and the Luminex® X-map method on the Bio-Plex® platform, respectively. Results were adjusted to total protein concentration and presented as the amount of cytokine per protein [pg/mcg protein]. Statistical analysis was performed using SAS 9.3 (Cary, NC). The means and standard deviations of all variables among women with and without vulvovaginal irritation, were compared using independent samples t test.

Results: A total of 26 postmenopausal women were enrolled into the study (symptomatic: n=15; asymptomatic: n=11). Mean vaginal pH for all participants was 5.9 ± 1.2. There were no significant differences (p > 0.05) among symptomatic versus asymptomatic women: age, age at menopause, vaginal pH and all vaginal and serum cytokines and chemokines (IL-1β, IL-4, IL-5, IL-6, IL-8, IL-10, IL-12, IL-13, TNF-α, GM-CSF, MIP-1-alpha, RANTES). GM-CSF was the most abundant vaginal cytokine with mean vaginal GM-CSF levels being 146.5 ± 165.6 pg/mcg of protein and 146.0 ± 173.5 pg/mcg of protein in the symptomatic versus asymptomatic groups, respectively (p=0.99).

Conclusions: Postmenopausal vulvovaginal symptoms did not correlate with a vaginal inflammatory markers. There was no difference in serum or vaginal cytokines between postmenopausal women with or without symptoms commonly associated with vaginal atrophy implying that this is a local reaction.