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**GENITOURINARY INJURIES SUSTAINED BY FEMALE U.S. SERVICE MEMBERS DURING OPERATION IRAQI
FREEDOM AND OPERATION ENDURING FREEDOM**

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(Presentation to be made by Dr. Amy M Reed)

Objectives: Until recently, female US service members (SMs) have not been permitted to serve in direct combat roles. However, during Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) a large number of female SMs have been wounded while serving in combat support roles. This included an unprecedented number of women with genitourinary (GU) injuries. No prior studies have reported either the incidence or clinical picture of these injuries. The objective of this study was to describe the epidemiology of GU injuries among female US SMs during OIF/OEF as well as understand the potential for increased female GU injuries in future conflicts and the long-term sequelae from these injury patterns.

Materials and Methods: The Department of Defense Trauma Registry (DODTR) was reviewed to identify all US SMs diagnosed with GU injury from 2001 to 2013. The DODTR includes data for wounded SMs treated at any US combat support hospital, the in-theater equivalent of a civilian trauma center. Female SMs with ICD-9-CM diagnosis codes and/or AIS codes for GU injury were included. Data on all females with GU injury were reviewed, including battle injury (BI) and non-battle injury (NBI). Basic demographic and injury characteristics were reported.

Results: Among the 1463 US SMs diagnosed with GU injury while deployed to OIF/OEF, 20 (1.4%) were female (median age: 25; IQR 21-27). Of these, 9 were BI (45%) and 11 were NBI (55%). The distribution of injury location was as follows: renal injuries (n=12), vulvar injuries (n=3), vaginal injuries (n=3), perineal injury (n=1), and bladder injury (n=1). Median Injury Severity Score was in the severe range (ISS=21; IQR 6-32); and 4 women (20%) died of their wounds. Important associated injuries included colorectal (n=5) and lower extremity amputation(s) (n=2). The most common mechanism of injury among the 9 women with GU BI was improvised explosive device (IED) blast (n=6), followed by other explosions (n=2) and gunshot wound (GSW) (n=1). Mechanisms of GU NBI varied, including GSW (n=2), fall (n=2), fire/flame (n=1), knife wound (n=1), unintentional machine injury (n=1), motor vehicle accident (n=1), sports injury (n=1), fight (n=1), and pedestrian injury (n=1).

Conclusion: Female GU injuries comprise a small portion of all GU injuries sustained during OIF/OEF with the most predominant being renal injury. Now that the ground combat exclusion policy has been lifted, this data can be used as a model for the expected injury patterns in future female combatants. Long term applications for this data include research and development for personal protective equipment and development of a multidisciplinary approach to long-term comprehensive care following GU trauma.

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