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COMPARISON OF NEW DIAGNOSTIC ULTRASOUND SYSTEM (KNOLL/MIDUS SCAN) WITH DUPLEX ULTRASOUND FOR THE EVALUATION OF ERECTILE IMPOTENCE

Duplex ultrasound scanning is a reliable, noninvasive method to evaluate penile arterial blood flow. However, duplex ultrasound has diagnostic limits and the technique is user dependent, expensive and time consuming. Recently, a new diagnostic ultrasound system (Knoll/MIDUS scan), that is rapidly done and inexpensive, was developed. There are few reports about the accuracy of machine. A total of 20 patients with erectile dysfunction underwent comprehensive evaluation, including Knoll/MIDUS scan comparing with a 13 MHz black and white duplex ultrasound. Our results showed the sensitivity and specificity of Knoll/MIDUS scan assuming the duplex ultrasound as the control, were 88 % and 67 %. The statistical significance between two methods was assessed by examining the correlation. The regression analysis of all velocity determinations ($n=50$) of cavernous arteries measured on the two techniques showed a significant relationship ($y=1.25x + 2.75$, $R=0.86$, $P<0.001$), but the values of PSVs by Knoll/MIDUS scan were significantly higher than those by duplex ultrasound (difference; 11.2 cm/sec., SEM 2.8, $n=25$, $p<0.001$).

These data demonstrate that the Knoll/MIDUS scanning of cavernous arteries correlates well with what is observed by duplex ultrasound but the values of PSVs by two methods are different. We conclude that Knoll/MIDUS scan is a reliable diagnostic methods for the screening hemodynamic factors and advantageous compared to Doppler ultrasound because it is easy to use and reliable.