Technical Release Bulletin:
Treating Highly Viscous Samples in Compliance with WHO 5th

Issue date: Monday, November 26, 2012

Attn: All SQA-V /QwikCheck™GOLD (WHO 4th & 5th compliant software)

Background:

The WHO 5th edition manual (page 13) describes the semen liquefaction as follows:

"Immediately after ejaculation into the collection vessel, semen is typically a semi-solid coagulated mass. Within a few minutes at room temperature, the semen usually begins to liquefy (become thinner), at which time a heterogeneous mixture of lumps will be seen in the fluid. As liquefaction continues, the semen becomes more homogeneous and quite watery, and in the final stages only small areas of coagulation remain. The complete sample usually liquefies within 15 minutes at room temperature, although rarely it may take up to 60 minutes or more. If complete liquefaction does not occur within 60 minutes, this should be recorded."

WHO 5th describes high viscosity and the effect on semen parameters (page 15):

"High viscosity can interfere with determination of sperm motility, sperm concentration, detection of antibody-coated spermatozoa and measurement of biochemical markers."

Further, WHO 5th describes Delayed Liquefaction (on page 14):

2.3.1.1 Delayed liquefaction

Occasionally samples may not liquefy, making semen evaluation difficult. In these cases, additional treatment, mechanical mixing or enzymatic digestion may be necessary.

1. Some samples can be induced to liquefy by the addition of an equal volume of physiological medium (e.g. Dulbecco's phosphate-buffered saline; see Appendix 4, section A4.2), followed by repeated pipetting.
2. Inhomogeneity can be reduced by repeated (6–10 times) gentle passage through a blunt gauge 18 (internal diameter 0.84 mm) or gauge 19 (internal diameter 0.69 mm) needle attached to a syringe.
3. Digestion by bromelain, a broad-specificity proteolytic enzyme (EC 3.4.22.32), may help to promote liquefaction (see Box 2.2).

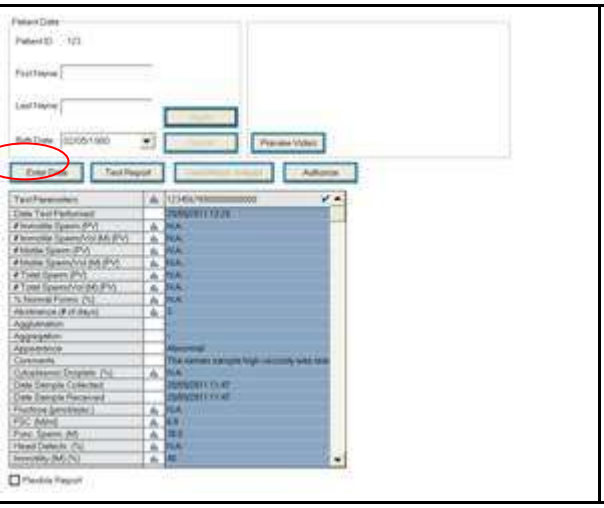
Information:

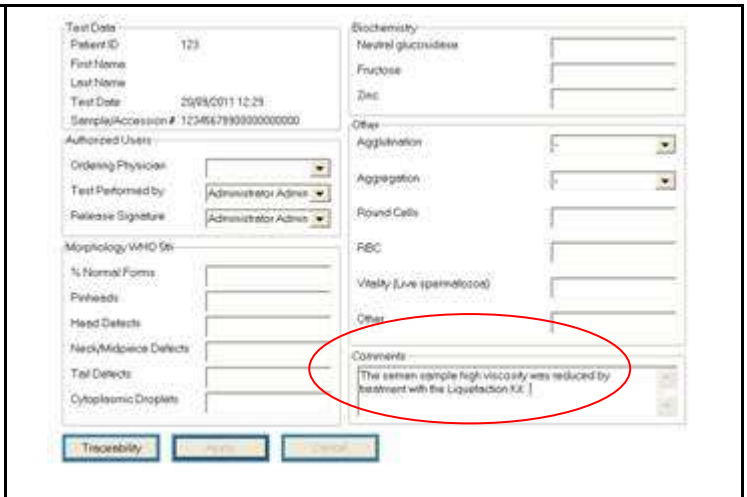
According to the WHO 5th edition manual, highly viscous or incompletely liquefied semen samples should be treated in order to reduce their viscosity which can interfere with the accuracy of the reported semen parameters. The methods for treating high viscosity or incompletely liquefied samples differ. The most effective method is limited proteolysis by broad-specificity proteolytic enzymes like bromelain or α-chymotrypsin (QwikCheck™Liquefaction Kit).

In order to provide a complete description of the sample and any additives for the physician, the SQA-V has an entry concerning the nature of the sample LIQUEFACTION and VISCOSITY that should be assessed and entered prior to the sample treatment (see below patient / sample data entry screen).

SAMPLE TYPE	**SELECT**
FRESH/WASHED/FROZEN/POSTVASECTOMY	
VOLUME	2.0 ml
WBC CONC.	**SELECT** < 1 M/ml / >= 1 M/ml
PH	8.0
APPEARANCE	NORMAL / ABNORMAL
LIQUEFACTION	NORMAL / ABNORMAL
VISCOSITY	NORMAL / ABNORMAL

COMMENTS about treating the semen using the Liquefaction Kit can be entered via V-Sperm by opening the following screens below. The comments will appear in the second page of the Semen Analysis Report. In addition, the customer can attach this technical bulletin describing WHO 5th recommended treatment of highly viscous or incompletely liquefied samples.





Semen Analysis Report

Patient Information		Laboratory Information	
First Name	N.A.	Ordering Physician	N.A.
Last Name	N.A.	Test Performed by	Administrator Administrator
Patient ID	123	Release Signature	N.A.
Birth Date	02/05/1980	Release Date	26/11/2012 12:28
Abstinence (# of days)	3	SQA-V SN #	57

Postvasectomy Test Results					Other Manual Tests				
SQA-V Automated Test	Test Results		Ref. Value Laboratory	Ref. Value WHO 5th	Manual Test	Test Results		Ref. Value Laboratory	Ref. Value WHO 5th
# Mobile Sperm	N.A.	#			Other	N.A.			
# Immobile Sperm	N.A.	#							
# Total Sperm	N.A.	#							
# Mobile Sperm/Vol	N.A.	M							
# Immot. Sperm/Vol	N.A.	M							
# Total Sperm/Vol	N.A.	M							

Comments

The semen sample high viscosity was reduced by treatment with the Liquefaction Kit.

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Distribution: All distributors