

Free essay on fundal height in routine antenatal screening

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Fundal Height in Routine Antenatal Screening

Fundal Height Measurement

“ Fundal height is the distance (in cm) measured with a tape measure from the top of the pubic bone to the top of the uterus (fundus) with the client lying on her back with her knees slightly flexed” (Ricci & Kyle, 2008, p. 324). It's also ensured that the client's bladder is empty while the test is performed (White et al., 2012).

Typically, the fundal height increases as the pregnancy progresses. It indicates fetal growth and provides a gross estimate of the pregnancy's duration (Ricci & Kyle, 2008) where each prenatal visit must correlate with appropriate fetal growth (Beatty, 2008).

In providing pregnant women with antenatal care, fundal height is one of the measures used for detecting fetal growth abnormalities during the early stages of pregnancy (Gardosi & Francis, 1999). This measure is important as growth abnormalities at this stage can lead to adverse outcomes, which include perinatal mortality and morbidity.

Size is often used for defining limits. In particular, the size can be either SGA (Small for Gestational Age) or LGA (Large for Gestational Age), which, as an example, can be taken at the tenth and ninetieth centile limits, respectively. If a baby's weight falls outside these limits then it is said that the baby “ is more likely to have abnormal mophometry and tests of wellbeing” (Gardosi & Francis, 1999), although many of these babies are actually normal and just constitutionally small or large. Such discrepancy arises because the limits are often applied without regard for the mother's parity and ethnic group,

booking weight, and height.

A series of measurements is needed in order to effectively detect growth abnormalities. In particular, the monitoring of fetal size is conducted during the third trimester of pregnancy (Morse, Williams & Gardosi, 2009). However, repeated ultrasound scans are expensive and logistically not feasible and so fundal height measurements are used as an alternative. Fundal height measurements are simple to perform and they are widely practiced and are routinely conducted in all antenatal settings (White et al., 2012). As such, it may be the only data collected on an antenatal card in most countries where resources are poor. Moreover, while ultrasound scans perform better if gestational dating is conducted within the optimum window, fundal height measurements tend to be more flexible (White et al., 2012). It should be noted, though, that compared to ultrasound scans, the use of fundal height measurements leads to a decreased detection rate and an increased rate of false positives, which in turn reduces the ability for detecting the occurrence of growth retardation (Morse et al. 2009). However, it should be noted that fundal height measurement can be used not only for the detection of abnormal fetal growth but also for the prediction of the gestational age (White et al., 2012).

Evidence on the effectiveness of fundal height measurement is mixed where some studies indicate it to be a good indicator of IUGR (Intrauterine Growth-Restricted) while others claim that it doesn't have sufficient benefit (Morse et al., 2009). In particular, a study conducted by McDermott (Morse et al., 2009) showed that the average sensitivity for the detection of IUGR was 65%

where the false-positive rate was 50%. Moreover, the detection rates in various studies ranged from 17 to 93 percent, which might have been due to the inconsistent methods applied as well as to the varying definitions for the endpoint or the level of IUGR or SGA to be detected (Morse et al., 2009). In addition, the results of previous studies might be overly optimistic, given that these studies were small-scale and conducted by motivated researchers on selected populations. On the other hand, the unselected populations where conventional protocols were used showed lower detection rates at around 25% (Morse et al., 2009). Similarly, detection rates of about 15% were found among low-risk pregnancies, probably due to a decreased level of suspicion (Morse et al., 2009).

Advice for Women

According to Morse et al. (2009), a non-elastic tape measure should be used for the measurement and that the measurement should be plotted on a customized chart from the 26th to the 28th week, with follow-ups, preferably with the same practitioner every two to three weeks.

In the study conducted by Gardosi and Francis (1999), referrals for investigations of the fetal growth were advised if the height measurement fell outside the customized limits (i. e. after considering the pregnant woman's ethnic group and parity, booking weight, and height) or if the last 2 measurements were within the limits but suggested a slope that was flatter or steeper than the 10th or 90th centile lines. In particular, ultrasound scanning is recommended if the fundal height goes beyond the limits (Gardosi & Francis, 1999; Morse et al., 2009), but Morse and her colleagues

(2009) also recommend that investigations by umbilical artery Doppler be performed if the ultrasound scan findings confirm that the fetus is SGA. The use of Doppler flow velocimetry has been found to reduce morbidity and mortality when either or both maternal hypertension and fetal growth restriction are present, although it hasn't been found useful in the investigations of pregnancies where such complications don't exist.

Morse et al. (2009) suggest that procedures for further investigation consist of ultrasound biometry, amniotic fluid assessment, and the Doppler flow. They also indicate the following conditions as indications for referral for further investigation: if there is concern over excessive growth due to a steep curve; if growth is flat or static; and if the fundal height falls below the tenth centile line on the customized chart (Morse et al, 2009). A first measurement above the ninetieth centile line does not require a referral for LGA unless other clinical concerns such as polyhydramnios exist (Morse et al., 2009). Furthermore, Morse et al. (2009) suggest that if the ultrasound results are normal then use of the fundal height measurement should be resumed; otherwise, the patient should be referred for urgent obstetric review.

According to Morse et al. (2009), fundal height measurement must be used to complement ultrasound biometry in a pregnant woman's assessment when fundal height is not suitable, when an increased risk of fetal growth restriction exists, or when an increased risk has been identified with the pregnancy due to suspected abnormal growth.

Fundal Height and Anxiety in Pregnant Women

The monitoring of fetal growth can cause some anxiety in the pregnant woman who would naturally be concerned of her child's health. It's important for this to be addressed as studies have shown that a woman's psychological state during pregnancy seems to have an influence over the growth of the fetus and the length of gestation (Power & Schulkin, 2005). As such, it would help for the medical practitioner to explain the procedure to the patient while providing emotional support (Illustrated Manual of Nursing Practice, 2002). In addition, a show of modesty and an explanation of what to expect can help alleviate the patient's anxiety (Heller & Veach, 2008).

Discrepancies in Fundal Height Measurements

Midwives and practitioners employ various techniques and methods for assessing and recording the fundal height. One discrepancy is in the detection of small babies as the endpoint, but with variable definitions, from -2 SD or -1 SD, to 10th or 5th weight-for-gestational age centile (Morse et al., 2009). Another is in the method of assessment of the symphysio-fundal height (SFH) where some include the palpation in estimating the size of the uterus against some basic anatomical landmarks whereas others measure by callipers or by centimeter tape (Morse et al., 2009). The measurement is done in the midline, or following the longitudinal axis of the uterus, with or without correction of the upper pole to the midline.

Still, another discrepancy is in the frequency and timing of the measurement where some take the measurement at one or two different gestational ages whereas others perform a serial assessment. This also leads to a range of

indications for referral, which include a measure below a lower limit, or static or slow growth. As well, some do not plot the measurements but only record them as numbers against the gestational age under the incorrect assumption that one week gestation should be equivalent to a 1-centimeter increment in the symphysis–fundus height (SFH). Moreover, different charts have been produced from the local populations where there is considerable variation in the standard they represent. Some charts are based on menstrual dates while other charts are based on the routine ultrasound-dated birthweight.

Future Recommendations

With the prevalence of fundal height measurements in antenatal care, it is recommended that standard practices be established for the conduct of this test in terms of the method used and the frequency of assessment. This will ensure accuracy, consistency, and uniformity in the measurement results across all antenatal care facilities. It is also recommended that midwives and medical practitioners be provided with training on the proper way of measuring the fundal height to ensure that the correct way of measurement is being employed. In addition, fundal height measurement should be made a part of a completely integrated system where standards for measurement and plotting, as well as the care pathways for management and further investigation, are clearly defined (Mercer et al., 2009).

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