and isomorphic red blood cells. The range of dysmorphic red blood cells was from 20-50% in 8 patients and from 50-80% in 10 patients. In all 10 patients biopsy confirmed the presence of glomerulopathy. Theories have been proposed to explain the change in the morphology of the red blood cells in glomerular diseases. Dysmorphic changes may be due to mechanical deformation of red blood cells on passage through altered glomerular capillary clefts. They may be caused by pathological changes in osmotic pressure which modify the red blood cells membrane. The presence of toxic enzymes resulting from inflammatory processes has also been cited as a cause of dysmorphic red blood cells[10].

Pellet et all[10] used a red cell analyzer to determine the site of bleeding in patients with hematuria. The distinction was based on red cell volume and the results were compared with phase contrast microscopy. They found that the site of bleeding in patients with microscopic hematuria was more accurately identified by phase contrast microscopy than by the red cell analyzer[10]. We have noticed that the technique has the potential for the detection of dysmorphic red cells carred out at an early stage of investigation will help in avoiding unnecessary radiologic and urologic investigations in cases of hematuria of glomerular origin [8, 9, 10]. This may be the way forward for the wider application of this technique in clinical practice.

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Use of anthropometric indicators for predicting risk of delivering low birth weight babies

The birth weight of newborns is an important factor that affects the future survival and quality of life[1]. The importance of predicting the risk of delivering low birth weight (LBW) babies during pregnancy arises from the consistent relationship found between LBW and higher risk of mortality, morbidity, malnutrition and suboptimal growth and development[2]. In Bangladesh, incidence of LBW is unacceptably high[3]. To reduce the incidence of LBW in the country, a search for indicators of high risks of delivering LBW baby should be an important part of the antenatal care. From different studies, it is consistently observed that maternal anthropometric indicators are the established risk indicators for delivering LBW babies[4]. Early prediction of LBW babies from maternal anthropometric indicators will help policy makers, planners, program managers and service providers adopt appropriate intervention strategy for its (LBW) reduction. Thus, the objectives of the present study is to: (i) identify the most suitable anthropometric indicator(s) of risk of delivering LBW babies and (ii) select appropriate cut off point of the indicator(s).

This was an analytical cross-sectional study, conducted in a Government Maternity Hospital at Dhaka from January to May 1999. Anthropo-metric measurements [height, weight and mid upper arm circumference (MUAC) for mothers and birth weight for newborns] of 316 pregnant women and their newborns (singleton) were recorded according to standardized technique[5]. The detailed methodology is described elsewhere[6]. Chi-square test was under taken to observe the association between discrete variables and LBW (data not shown). Multiple regression equation was carried out to find out the independent effect of different maternal factors on birth weight. Sensitivity and specificity analysis were undertaken to identify the suitable anthropometric risk indicator(s) for delivering LBW babies and to select cut off points for predicting risk women.

Significant positive effect of maternal height, weight, BMI and MUAC was observed on birth weight of newborns. For low maternal values of height, weight, BMI and MUAC (<145 cm, <40 kg, <18.5 and ≤21 cm) incidence of LBW were found to be 29.7, 40.0, 30.0 and 33.3 percents respectively and for higher maternal values (≥160 cm, ≥60 kg, ≥25 and ≥27 cm) the corresponding incidences were 4.3, 4.4, 8.2 8.3 percents respectively. In stepwise multiple regression equation age, weight, height, MUAC, BMI, hemoglobin, gestational age, income and education were included as independent variables and birth weight of the newborn was considered as dependent variable. Maternal weight alone explained the variation of birth weight by 16% and weight together with gestational age explained the variation up to 24% (Table I). For predicting of delivering LBW babies, sensitivity, specificity analysis were carried out for different cut off points of maternal height, weight and MUAC (Table II).

Table I: Multiple regression equation for estimating birth weight from maternal factors

Multiple regression equation	Adjusted R square
Y = 187.30 + 20.7 weight	0.16
Y= - 821.57 +18.68 Wt + 70. 63 gestational age	0.24
Y = - 1221.69 + 17.14 Wt + 72.30 gestational age + 37.81 hemoglobin	0.25

Where Y= Birth weight

Anthropmetric parameters usually reflect past (for height) and current (weight and MUAC) nutritional status. Undernourished mothers in the present study as with other studies gave birth to significantly more LBW babies[6-9]. To undertake appropriate intervention strategy for prevention of LBW, prediction of risk indicator is necessary in early pregnancy and even before pregnancy. For early prediction, we are interested to risk indicators such as height, pre-pregnancy weight and MUAC. For convenience, in this study, post-partum weight was considered as proxy for pre-pregnancy weight. In sensitivity/specificity analysis, the best cut off point is one at which values for both the sensitivity and specificity are maximum. Thus, from Table II, it is revealed that for predicting risk women, suitable cut off points are 151 cm for height, 51 kg for post-partum weight and 24 cm for MUAC.

Now question arises, which anthropometric parameter will we use for early prediction of LBW babies and what will be the cutoff point? At the field level, where MUAC can be measured with a measuring tape even by untrained persons, this parameter can be used to identify those women who will most likely deliver LBW babies. We recommend a cut off point of 24 cm for MUAC. Grass root level workers can screen the high-risk mothers with this simple tool and can refer to higher center for further screening. In health centers, where weighing scales/height-measuring equipments are available, we propose to use height or weight to screen the risk women. To identify

Table II: Sensitivity and specificity analysis for different cut offs of mothers anthropometric variables

Variable	Sensitivity %	Specificity %	Positive predictive value %	Negative predictive value %	Odds ratio	95% Confidence interval
Height (cm)						
<146.0	30.95	87.36	28.26	88.72	3.10	1.37-6.95
<151.0	61.90	62.07	20.80	91.01	2.66	1.30-5.49
<156.0	80.95	22.22	14.35	87.88	1.21	0.50-3.02
Post-partum weight (kg)						
<43.5	35.71	79.84	22.39	88.41	2.20	1.03-4.67
<51.0	78.57	45.35	18.97	92.86	3.04	1.33-7.15
<53.5	83.33	34.88	17.24	92.78	2.68	1.0.8-6.91
Mid upper arm circumference (cm)						
<22.0	14.58	88.06	17.95	85.20	1.26	0.47-3.24
<24.0	52.08	61.19	19.38	87.70	1.71	0.89-3.32
<26.0	72.92	38.43	17.50	88.79	1.68	0.89-3.52

higher risk mothers we can use height and weight at cut off points of 146 cm and 43.5 kg respectively and to identify at risk mothers, 151 cm and 51 kg can be used respectively for height and weight.

Canosa observed that all women whose post delivery weight was less than 41 kg had low birth weight infants[8]. Karim and Mascie-Taylor observed that weight at term provides more predictive power for LBW than MUAC and recommended a cut off point of 50 kg at term[9]. Attained height (except adolescent) cannot be modified by any intervention. However, advice for hospital delivery can be provided so that assisted delivery (if needed) can be ensured and proper care can be given to both mother and newborn. MUAC can be used for screening but not for monitoring purpose as its change is negligible during pregnancy. Pre-pregnancy weight is the most suitable anthropometric indicator for identifying risk women, because not only we can identify them, but also have ample of time to adopt appropriate interventions (food supplementation, nutrition education etc) to increase the weight to a desirable level. Therefore, we conclude that pre-pregnancy weight or first trimester weight can be used as the best maternal anthropometric risk indicator (43.5 kg for higher risk and 51 kg for at risk women) for predicting women of delivering LBW babies.

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Outcome of 153 cases of mitral stenosis after percutenuous transvenous mitral commissurotomy

Rheumatic fever and rheumatic heart disease continue to be the major health problem in all developing countries including Bangladesh. The epidemiology of rheumatic fever/rheumatic heart disease constitutes 34% of total hospital admission of cardiovascular diseases in Bangladesh[1]. Its incidence is 26 percent and ranks second among all the cardiovascular disease in our country[2, 3]. Rheumatic mitral stenosis is a very common problem in our population having an incidence of 54 percent among rheumatic heart disease with a female preponderance of 2:1[4].

Population survey done during late 1980 in Bangladesh showed a prevalence of rheumatic fever/rheumatic heart diseases in a mixed population of 7.5 to 7.8 per thousand[2].

Despite the introduction of penicillin and improvement in the standard of living and delivery of primary healthcare, rheumatic mitral stenosis remains an important medical problem in the developing countries like Bangladesh.

The challenge of percutenuous catheter based treatment of rheumatic mitral valve stenosis is to provide not only effective treatment but also equal or greater safety compared to close or open surgical commissurotomy which carries an operative mortality of 1-3 percent. The efficacy of percutenuous balloon commissurotomy for rheumatic valvular heart disease has recently been shown to be as effective as surgical commissurotomy in randomized studies[5, 6].

Badiuzzaman examined the immediate and short term follow-up results of percutaneous transvenous mitral commissurotomy in Bangladeshi patients[7]. One hundred nine patients underwent percutaneous transvenous mitral commissurotomy and it was observed that total mitral valve score was strongly