Cesarean section rates in Riyadh

In Safer 1415H the executive deputy minister of health assigned us to evaluate the cesarean section rates in Riyadh city because of complaints from the public about reports of increasing numbers of cesarean sections. Ministry of Health (MOH) annual reports for 1412H and 1413H provided the total numbers of normal, instrument-aided (forceps or vacuum), and cesarean deliveries for the Kingdom by hospital in each region.

C-section rates by region increased from 6.1% in 1407H to 7.5% in 1412H. The c-section rates by region for 1412H ranged between 3.7% and 10.2%, with a median of 7.2%. The highest regional rates were reported from Makkah (10.2%) and Bisha (9.4%).

The rates for MOH hospitals in Riyadh region during 1412H ranged from 0.7% (Rawydhat al-Ard Hospital) to 12% (Shagra Hospital), with a median of 6.2%. For 1413H, the rates for MOH hospitals ranged from 9.4% (Maternity and Children's Hospital [MCH]) down to 0.83% (Al-Kharj Hospital), with a median of 6%. There are no data available for the cesarean rate throughout Saudi Arabia for 1413H.

To verify these rates in Riyadh city, we performed a stratified single-stage cluster survey by taking a random sample of days for 1414H for all three MOH hospitals and two delivery centers. For each day we reviewed logbooks of the delivery room, operating room, nursery, death registry and abortion registry for all deliveries, including home and car deliveries, of both live and dead fetuses who weighed >=500gms or were >=22 weeks of gestation.

A cesarean section (c-section) was defined as a record of c- section in the registry book. Estimated c-section rates and other important birth statistics and standard errors were computed. According to our sample, for the year 1414H estimated rates for three major hospitals were 6.5% (95% confidence interval [CI] 4.3-8.7), 7.1% (95% CI 5.1-9.1) and 11% (95% CI 8.4-13).

The highest rate was reported from MCH, the referral hospital. The rates for two delivery centers were 2.9% (95% CI 0.6-5.1) and 3.2% (95% CI 1.6-4.9). These centers fell within the catchment area of MCH and handled many normal deliveries that would otherwise have gone to MCH. The combined estimate for MCH plus the two delivery centers was 8.3% (95% CI 6.7-9.9).

Hospital	Reported rate (%)	Estimated rate (%)	95% CI
MCH	10	11	8.4-13
Nasseriyah	1.6	1.7	0-4.3
Otigah	3.5	3.2	1.6-4.9
MCH & 2 birthing centers	7.9	8.3	6.7-9.9
Al Yamamah	7.6	7.1	5.1-9.1
Prince Salman	6.6	6.5	4.3-8.7

Table 1: Reported and estimated cesarean section rates, 1414H

C-section rates were the same for full-term and preterm infants (7.3%), while the rate for extreme preterm was 16.2%.

When we evaluated the MOH data form for normal and abnormal deliveries, we found misclassification; for example, the column for normal spontaneous vaginal delivery did not say whether the delivery was full term or preterm, and the column for breech delivery did not indicate whether the delivery was vaginal, instrument-aided or cesarean.

Interviews with obstetricians and nurses responsible for statistics revealed that each hospital or center used different definitions for abortion, stillbirth, preterm delivery and prenatal death. We also found no linkage between the files of the mother and her baby.

We found also no difference between estimated rates and hospital recorded rates (Table 1).

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Editorial note: The estimated cesarean section rates from MOH hospitals in Riyadh city were low compared with rates in Western countries and in other Middle Eastern countries. We found the estimated rate similar to the hospital recorded rates. C-section rates in general maternity units should be 10-12% or lower in the singleton population, but a more interventionist approach is indicated for very low birthweight infants, because perinatal mortality for very low birthweight infants is low in units with higher cesarean rates.[1]

The variation in rates among physicians was not attributable to the practice setting, the patient population, the degree of obstetrical risk, or the physicians' recent medico-legal experience, and it was not accompanied by corresponding differences in neonatal outcome. But the individual practice style may be an important determinant of the wide variation in the rates of cesarean delivery among obstetricians.[2]

The survival rate after cesarean birth for singleton infants with breech presentation was significantly higher than after vaginal delivery in the 1001-1500g group but not in the 501-1000g group.[3]

Because there are no standard definitions for normal and abnormal deliveries, the information in the data collection form sent to regional health authorities does not mean the same thing in each hospital. This means that differences in rates for types of deliveries, for live and stillbirths and for prenatal mortality could be partially or completely due to differences in definition as well as to misclassification in the data collecting form.

References

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