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SRINUAN HORSAKULCHAI : RISK FACTORS OF LOW BONE MINERAL DENSITY IN AMENORRHEA. THESIS ADVISORS : RAMPAI SUKSAWASDI NA AYUTHYA M.S.P.H., JUNYA PATTARAARCHACHAI, M.S.P.H., Sc.D. WICHARN CHOKTANASIRI, M.D.,BOARD. 101 P. ISBN 974-664-011-9

The purposes of this study are to construct an appropriate equation which reflects the relationship between risk factors and the odds of contracting amenorrhea, and to estimate the risks of factors influencing osteopenia and osteoporosis in young women with amenorrhea. The population of this research were 120 women aged 16-40 with amenorrhea whose menstruation had ceased for at least six month. These patients were recruited from the outpatient clinic of The Division of Gynecological Endocrinology at the Ramathibodi Hospital from June 1 1999 to January 31 2000. The study subjects were screened for case group and control group by value of bone mineral density(BMD), using a cutoff point at 1.06 gm/cm². BMD was measured using dual energy X-ray absorptiometry (DXA) at lumbar spine (L₂₋₄). This study was a case-control design and the data was analysed by multiple logistic regression.

The findings of this study showed that the following three factors; duration of amenorrhea, body mass index and calcium intake could explain 37.30 percent of variance in low bone mineral density ($R^2 = 37.30$). Logistic regression for low bone mineral density revealed the following ln Odds equation, modified by different variables and different factors.

$$\begin{aligned} \text{Ln Odds} &= -1.1010 + 2.9150 (\text{long duration of amenorrhea}) \\ &\quad - 0.4881 (\text{body mass index} < 20 \text{ kg/m}^2) \\ &\quad - 2.4493 (\text{body mass index} > 25 \text{ kg/m}^2) \\ &\quad + 1.6993 (\text{low calcium intake}) \end{aligned}$$