BACKGROUND: The object of our study is to research into the quality of the different delivery positions, offered in our hospital with special focus on the advantages for birth in water. METHODS: From February 1997 to 1 October 2000 we do research retrospectively on data of 555 deliveries in water, 320 on the traditional bed and 125 on the delivery stool give us the possibility to investigate about duration of birth, rate of episiotomies and perineum lacerations, consumption of painkillers, arterial umbilical cord pH and haemoglobin postpartum. RESULTS: In our comparing analysis of the duration of birth we could show a relevant reduction especially for primiparae which had delivered in water. The reduction is only significant for the first part of labor (360 minutes in the pool, 445 minutes on the traditional bed and 420 minutes on the stool) whereas there is no difference for the second part of labor. The significant reduction on episiotomies (1%) in comparison to the one on the traditional bed (20%) or on the stool (10%) for primiparae in water doesn t mean an increase at perineum lacerations. (each 25%). In water we saw no lacerations/injuries of the perineum for 58% of primiparae, on the traditional bed 36% and on the stool 43%. No woman in labour needed a painkiller in the pool. There was no difference found between the three groups referring to the arterial umbilical cord pH or the haemoglobin postpartum. CONCLUSIONS: Our study shows relevant medical advantages for a delivery in water: and a significant reduction of the duration of the first part of labour, significant less episiotomies and perineum lacerations and no need for painkillers. The security of the neonate is guaranteed under attention to the known contraindications.