The ubiquitin-proteasomal system which is the major pathway for intracellular protein degradation is also involved in sperm quality control in the mammalian epididymis. Defective sperm become surface-ubiquitinated during epididymal passage. The level of sperm surface ubiquitination negatively correlates with their quality. Hypothetically it is possible that after fertilization, highly ubiquitinated sperm, naturally present in mammalian ejaculates, would be actively recognized by oocyte (probably via 26S proteasomal complex). Subsequent partial or total sperm degradation should negatively affect the development of the potentially defective embryo. In this study, we examined the effect of sperm ubiquitination on the early embryonic development in pig (Sus scrofa f. domestica) using the method of intracytoplasmic sperm injection (ICSI). In vitro embryonic development to the blastocyst stage after ICSI was comparable with other laboratories. In this study, no significant difference was observed in the formation of pronuclei between oocytes fertilized by lower and highly ubiquitinated sperm cells. On the other hand, significantly better embryonic development to the blastocyst stage was observed in oocytes fertilized by sperm with lower surface ubiquitination (17 %) compared with oocytes fertilized by highly ubiquitinated sperm cells (5 %). In addition, we observed significantly better embryonic development to the blastocyst stage in the group of oocytes that were fertilized by sperm cells with masked ubiquitin epitope, using appropriate antibody (19 %) compared with the control group (10 %) without antibody treatment. These results suggest the active recognition of the sperm surface ubiquitin by the oocyte (probably via 26S proteasomal complex) leading to the impaired embryonic development in pig. It is possible that ubiquitin doesn’t serve only as marker of sperm quality but also plays a role in the recognition of low-quality sperm cells by oocyte after fertilization.