Cancer treatment includes the use of chemotherapeutic agents, which have various effects on tumour cells, such as direct toxicity to cancer cells, immunogenic cell death induction and changes in cancer cells phenotype. Throughout the last decade many researchers have been focusing on the induction of genotoxic stress and cellular senescence, which chemotherapy can trigger. Even though induction of senescence in cancer cells represents an important mechanism for tumour suppression, there has been increasing evidence that shifting cancer cells into a senescent state by chemotherapy is not always beneficial. Senescent cells are associated with a specific secretory phenotype, which allows such cells to alter their microenvironment, modulate anti-tumour immunity, induce tumour suppression and even promote cancer development. Therefore, senescent cells elimination by innate or specific immunity, which can be boosted by immunotherapy, can be an important barrier preventing tumour growth.